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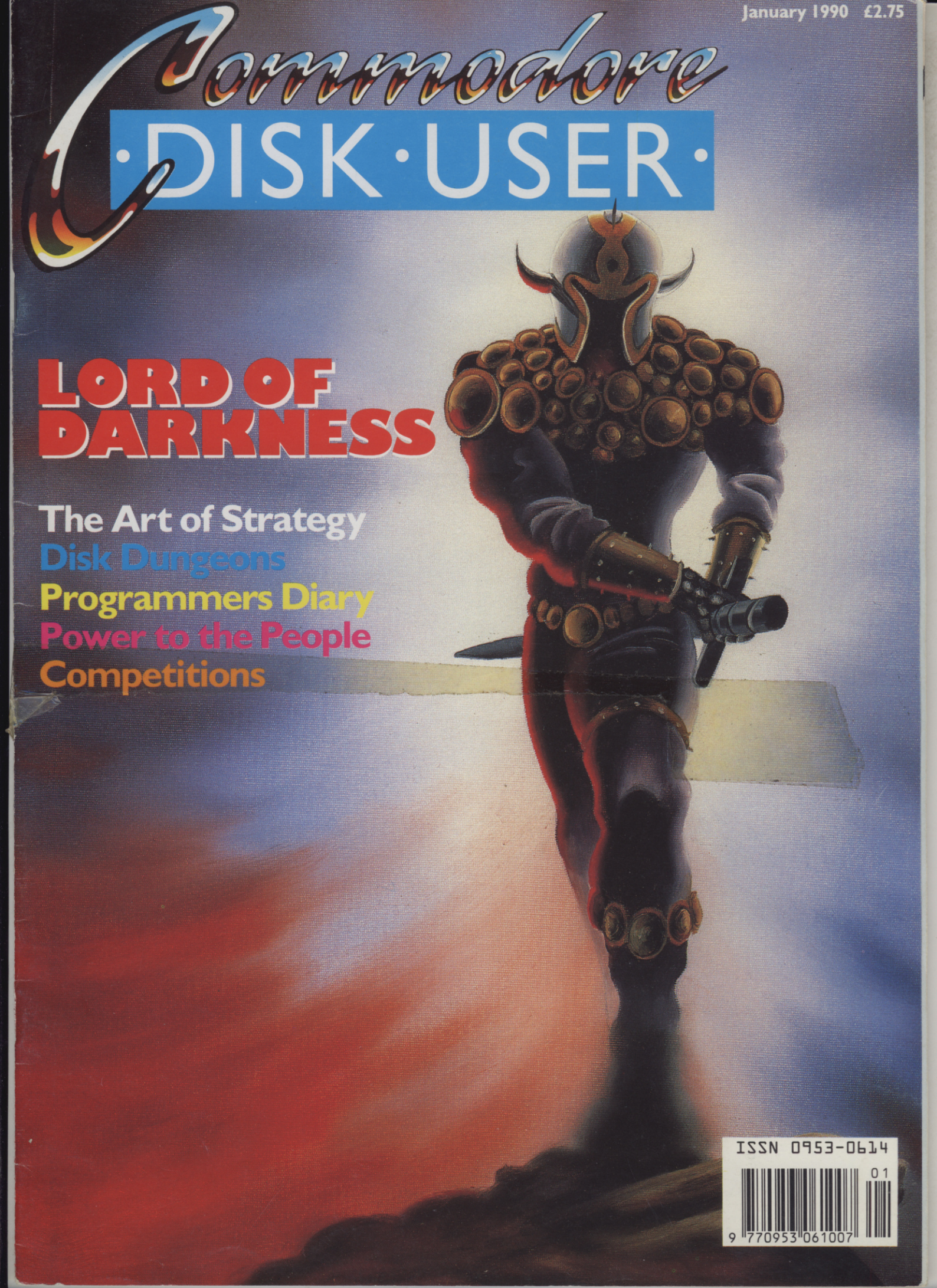

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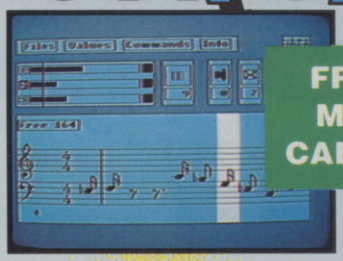

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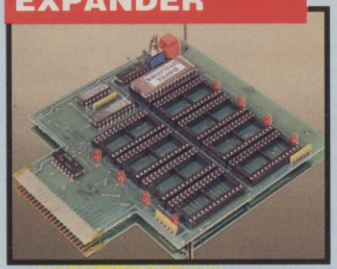

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SUBSCRIPTION RATES

Here are the rates for subscriptions to CDU with effect from November 1989

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Far East	**£41.60**
Rest of the World £39.70 or	
USA	**$69.00**

Airmail rates on request

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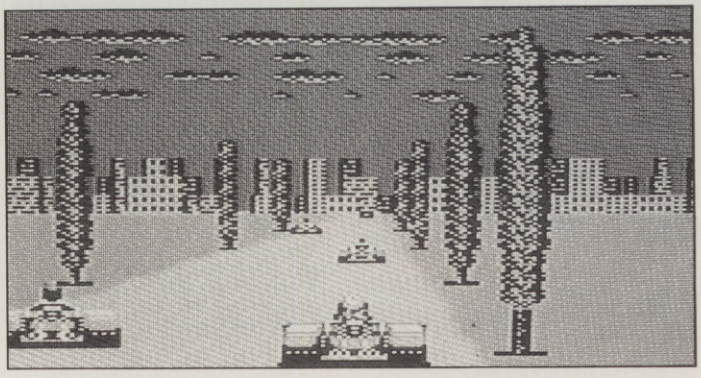

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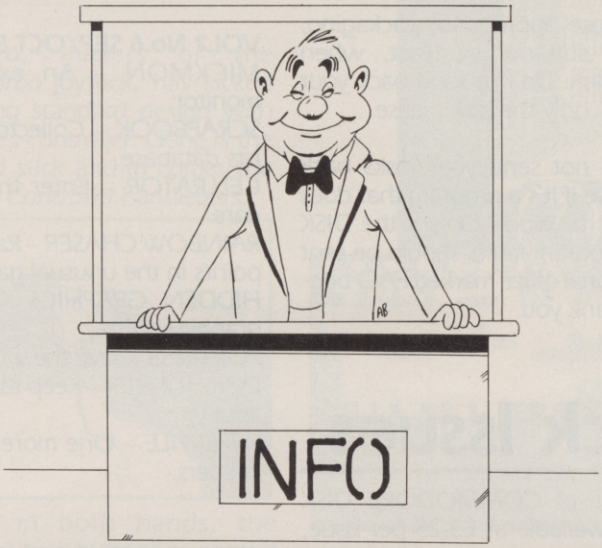
Editor's Comment



A BIG APOLOGY MUST GO TO 'INCENTIVE SOFTWARE'. ON THE DECEMBER DISK WE PUBLISHED AN ADVENTURE GAME ENTITLED 'KRON'. UNFORTUNATELY THE CREDITS THAT SHOULD HAVE GONE TO INCENTIVE SOFTWARE WHERE LEFT OFF. THE PROGRAM WAS WRITTEN USING THEIR EXCELLENT UTILITY - 'GRAPHIC ADVENTURE CREATOR'. COMMODORE DISK USER APOLOGISE TO INCENTIVE FOR THIS ERROR.

A very warm welcome goes out to you all from yours truly. This is the third issue of the now monthly CDU, and I'm afraid that I got rather carried away with the NOVEMBER issue. As most of you will by now have realised I made one or two boobs with the content of the mag. Basically, I let the euphoria of going monthly cloud my reasoning! First and foremost I apologise for all the missspelt words that appeared (hopefully this will not happen again). Next, there is the matter of the Award Maker review on page 14. The observant amongst you will have realised that the 'Editor Control Summary' does in fact refer to that excellent game we published some time ago called 'MICRODOT', and not to the Award Maker review (slapped wrist).

Perhaps the biggest boob of all concerns 'TRIVIA CHALLENGE COMPETITION' (Page 39). The 50 runners up will in fact each win 5 blank disks, and NOT a blank tape as mentioned (just who can get a tape into a disk drive is beyond me!!). To cover my own back, I will apologise also for any other mistakes and errors that you, the reader, may have spotted. Now that I have got that off may chest let us get on with the show!!!

I would like to tell you all about a new service that we are offering our readers. In future issues, providing we get a reasonable response, we will be starting a new page called 'TECHNO INFO'. Basically, this page will belong to YOU, the readers. You know the sort of thing we are looking for! Letters about any programming problems you might have. Hints and tips that you think other people could share. TECHNO INFO will be featured in every issue of CDU and will allow you to write in with any technical problems that you may be experiencing. These will be programming problems that could range from a query about a simple Basic routine, to complicated machine code problems. The feature will also cover the main peripherals associated with the C64 (Printers, Disk Drives etc). So if you have any annoying problems that seem impossible to solve please write to: TECHNO INFO, CDU, Argus House, Boundary Way, Hemel Hempstead, Herts HP2 7ST. The feature will primarily be a question and answer type section, although a very limited number of problems will have an accompanying program.

Christmas is usually a time for fun and entertainment, therefore this month's issue of CDU is primarily an entertainment issue. Games players will be pleased to see that we have no less than 6 games on the disk plus the 1st part of TRIVIA CHALLENGE. Serious programmers have not been left out as we have provided you with 3 utilities to add to your library.

The games on the disk are as follows: Frogs in Space, 4 in a Row, Blackjack, Lord of Darkness, Margo and Jetrace 2000. The 3 utilities comprise of 6510+ Unassembler, Selective Colour Restorer and Ultimate Font Editor. Refer to the contents page for a quick rundown on what is what, or alternatively turn the pages of the magazine.

We would like to wish you all a very Merry Christmas and a Happy New Year from all at **CDU.**

Disk Instructions

We do our best to make sure that Commodore Disk User will be compatible with all versions of the C64 and C128 computers.

Getting the programs up and running should not present you with any difficulties, simply put your disk in the drive and enter the command.

LOAD "MENU",8,1

Once the disk menu has loaded you will be able to start any of the programs simply by pressing the letter that is to the left of the desired program.

It is possible for some programs to alter the computer's memory so that you will not be able to LOAD programs from the menu correctly until you reset the machine. We therefore suggest that you turn your computer off and then on before loading each program.

How to copy CDU files

You are welcome to make as many of your own copies of Commodore Disk User programs as you want, as long as you do not pass them on to other people, or worse, sell them for profit.

For people who want to make legitimate copies, we have provided a simple machine code file copier. To use it, simply select the item FILE COPIER from the main menu. Alternatively, you can load it by typing LOAD 'FILE COPIER'8,1 then SYS52000. The copier works with a single drive, and is controlled by means of the function keys as follows:

F1: Copy file-the program will prompt you for a filename.
F3: Resave the memory buffer-you may get an error on a save (perhaps you left the drive door open). Use this to try again. Or if you want to make multiple copies to other disks.
F5: Disk commands-allows you to enter any regular C64 disk command.
F7: displays the disk directory
F2: Exits the program and returns you to basic.

Disk Failure

If for any reason the disk with your copy of CDU will not work on your system then please carefully re-read the operating instructions in the magazine. If you still experience problems then:
1) If you are a subscriber, return it to:
INFONET LTD
5, River Park Estate
Berkhamsted
HERTS. HP4 1HL
Tele: 0442-876661

2) If you bought it from a newsagents, then return it to:
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(Within eight weeks of publication date disks are replaced free).

After eight weeks a replacement disk can be supplied from Protoscan for a service charge of £1.00. Return the faulty disk with a cheque or postal order made out to Protoscan and clearly state the issue of CDU that you require. No documentation will be provided.

Please use appropriate packaging, cardboard stiffener at least, when returning disk. Do not send back your magazine – only the disk please.

NOTE: Do not send your disks back to the above if it's a program that does not appear to work. Only if the DISK is faulty. Program faults should be sent to the editorial office marked FAO bug-finders. Thank you.

Back Issues

Back issues of COMMODORE DISK USER are available at £3.25 per issue, which includes postage and packing via:
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VOL 2 No.4 MAY/JUN 89
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Basic Extension – Windows and Icons the easy way B-Raid – Vertical scrolling shoot 'em up Diskonomiser – Prudent disk block saving Help – Design your own information help screens
Orsital – An arcade style game with a difference
Program Compare – Modifying Basic progs has never been easier
Raster Routines – A few colourful demos
Sprite Editor 1 – A no nonsense basic sprite editor
Wabbit – help the rabbit collect his carrots

VOL 3 No.2 DECEMBER 89
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Musibasic – Sound and Music made easy
Template Design – Design your very own backdrops
Quikword – A Basic wordprocessor that is expandable
Kron – Rescue the princess in this fantasy adventure
Limbo – Collect the cells off the blocks
Phobos – Break out of jail and gain your freedom
Panic – A quick eye as well as a quick joystick is required here.

All orders should be sent to: INFONET LTD, 5, RIVER PARK ESTATE, BILLETT LANE, BERKHAMSTED, HERTS, HP4 1HL
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NEWS

Flight Stick

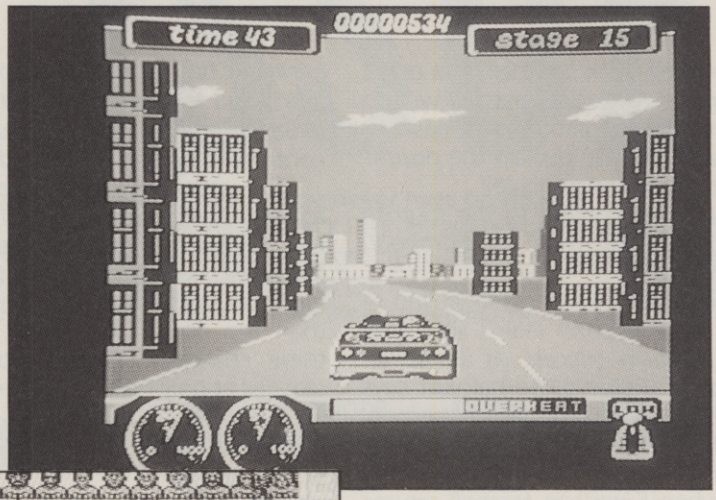
Spectravideo, makers of the *Quickshot Turbo* joystick, has kicked out the boring standard design with its latest games controller. Gone is the single-handed stick and in comes the *QS 129 Flight Controller* handlebars.

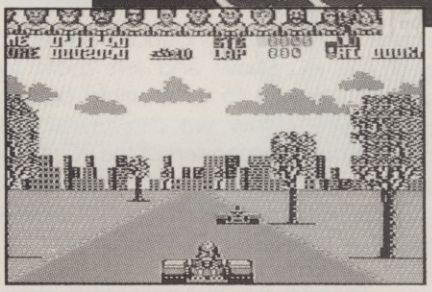
Grasped in both hands, the controller uses two buttons to control cursor movement and firing but the company has not yet revealed how control is actually achieved inside the stick. All this can be yours for just £12.50 or for the more conventional *Turbo* the price is now down to £10.50.

Next time you see someone wrestling with a long stick it may not be a madman wresting a snake with advanced rigor mortis, it could be an eccentric Spectravideo user.

How is it done?

It looks as though Christmas is going to have more to do with red nosed Ferraris rather than reindeer. With **Domark's** *Hard Drivin'* looking so

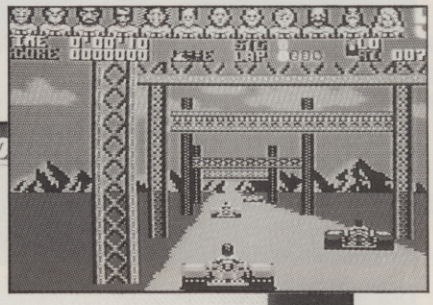


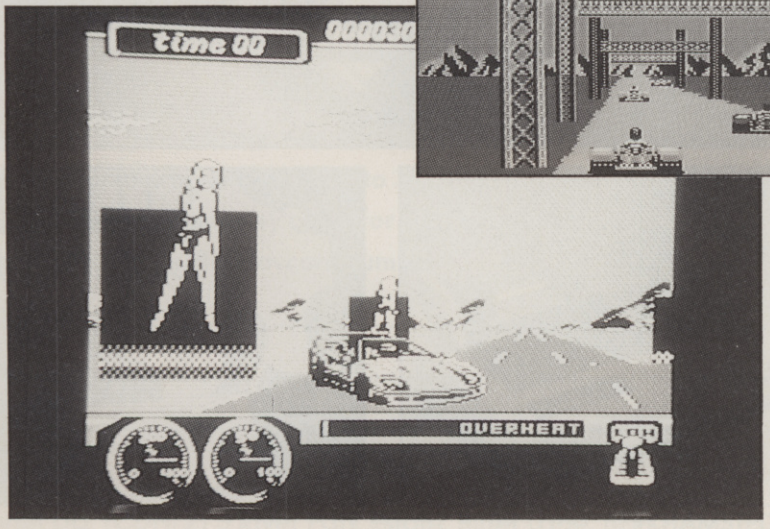


excellent, **US Gold's** *Out Run II* coasting along on a wave of popularity, there's also **Activision's** *Power Drift* firing up all cylinders for a drive to the Number One slot.

Like *Out Run, Power Drift* is another **Sega** arcade game with lumps and bumps in all of the 27 race tracks. Added to this there are five variations for each: snow, desert, tarmac, mud and nightime.

Activision are no strangers to racing games, having produced *Super Hang On* in the past, and know how





far the C64 can be pushed. A complex game like *Power Drift* demands a seasoned programmer and Chris Butler is the chosen man. His past successes include *Space Harrier, Ghosts 'n' Goblins, 720 Degrees* and *Thunderblade* which indicates his past associations with some of the top companies in the business.

Activision's hopes are high and with Domark setting the pace the road to the valued Christmas top spot is up for grabs.

On disk *Power Drift* will cost £14.99 but it will also be out on cassette for £5 less than this for those who like a transfer challenge.

Glare Screening

Computer screens can seriously damage your health and curative measures can severely damage your wealth. The latest glare filters is the *Olympus Tipo* from London's **Data Sound** at the rather off-putting price of £89.

What you get for your cash is an industrial standard screen which fixes to the monitor by means of Velcro strips. According to Data Sound this then protects the user from the harmful effects of glare and flicker such as headaches and bloodshot eyes. Sounds like a hangover to me, perhaps pint glasses made from the sazme material could protect our Editor from the morning after...

Load of Dribble

There are three great philosophies in computer games: racing cars, football games and ninja punch-ups. Driving is covered elsewhere, ninja has been chopped in this issue but football... ah

yes, football. Stick 'football' in a game title and the mindless masses will go ape and buy the game in their millions. How else can you explain the dozens of football games available?

The latest convert to the football bonanza is **CS** with its *European Superleague*.

The player has to manage one of eight top European teams and steer them towards success as European champions. Relive those halcyon days when Bayern Munich faced Liverpool or when Arsenal could play Real Madrid or maybe look forward to the days when European football returns to England, all for £14.99.

At the same price, *Sporting Triangles* is another new **CDS** game which is based on the TV sports quiz. Over 2,500 questions are claimed to be contained in the game covering the twelve sports of Soccer, Cricket, Rugby (both flavours), Golf, Tennis, Boxing, Athletics, Indoor Sports, Equestrianism (horsey sports to you), Sport on Whels, USA Sports and Pot Luck.

Pricey Printers

We're convinced that all readers of *Commodore Disk User* are immensely rich as well as intelligent and discerning in their magazine choice. Why else would we tell you about **Epson's** latest colour printers?

The LQ860 and LQ1060 are letter quality printers, as the initials suggest, but added to this they can produce printouts in any combination of seven colours. Both are 24-pin dot matrix models but the 860 is an 80-column and the other is a wide platen version producing up to 132 columns. Conforming to the Epson JX80 standard, the machines cost a cool £769 and £959 respectively. Prices like these even make the Amiga 2000 seem cheap!

Citizen Gain

Nottingham-based distributor, **XMA** has been awarded *Citizen's European Distributor of the Year Award 1988*. The announcement follows a record year with sales up 108 per cent. One of the company's sales team, Penny Williams, also scooped the £1,000 prize as Salesperson of the Year.

At the same time Citizen is crowing about the sale of its 500,000th 1200D printer. It has taken the company only four years to reach this figure and it looks as though the machines will continue to appear well into the 1990s.

The paper feed for the printer has recently undergone a style change to improve its tractor feed mechanism and the platen has been extended to cater for paper sizes which are slightly larger than the normal A4 width. Despite these changes the price stubbornly remains at only £199.

Show Down

Last month we announced the death of the PC Show and left room for speculation as to what might happen next year. Now we can reveal that **Montbuild**, organisers of the PC Show, has announced the *Business Computing 90* exhibition which will be held at Earls Court between September 25 and 28.

There's no business like show business but co-PC Show organisers, **VNU**, fail to see the joke as Montbuild steal their thunder by announcing the new exhibition. Even before the announcement there was a multi-million lawsuit pending and this news can only rub salt into an already stinging wound.

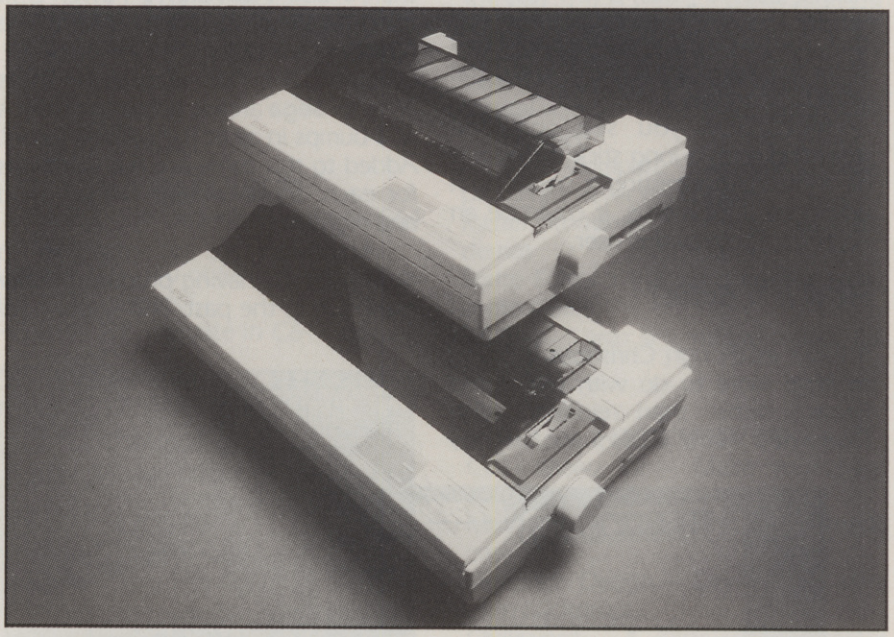
The good news is that the show is for the trade alone so we won't have to suffer the fiasco that passed as this year's PC Show Leisure Section.

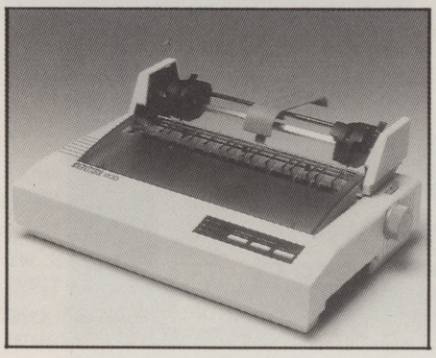
Art Classics

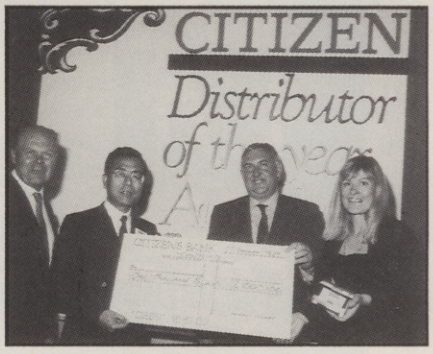
The best news of the past few weeks is that *Electronic Arts* has decided to add five not-so-old C64 games to its range of *Software Classics*.

Mark Lewis, Arts' managing director says, "The original *Software Classics* have proved highly successful with both dealers and the buying public. It has made award-winning programs like *Marble Madness* and *The Bard's Tale* available to everyone."

The new titles all cost £6.99 and comprise *Serve & Volley, Rack 'em, Fast Break, TKO, and PHM Pegasus.*







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Disk Dungeons

Gordon Hamlett takes us further into the world of fantasy.

A very quiet month with nothing new to report on. At the time of writing (end of October), I was hoping for some pre-Christmas releases to review but nothing has landed on my desk yet. Hopefully next month will see the latest batch of role playing games from Electronic Arts.

In the meantime, I have a chance to catch up with some of your letters, not all of them complementary but all welcome nevertheless. If you want to write in on any subject concerning adventures and role playing games, then please drop a line to me, Gordon Hamlett, Disk Dungeons, Commodore Disk User, Argus House, Boundary Way, Hemel Hempstead, HP2 7ST.

To start with, a letter that questions the whole morality of role playing games.

Dear Disk Dungeons,
I cannot help but notice that you are starting to give a lot of prominence to the Dunegons and Dragons type of game in your magazine and I urge you to stop and consider the amount of harm that you are doing.

Young people who play these so called 'games' are very easily led and it surely cannot be right to expose them to situations that involve witchcraft, demons and devils and worshipping false Gods.

There have been several well-documented cases of young people getting involved in these 'games' to such an extent that fantasy and reality blur into one. The alter ego that they are playing becomes so real to them that it takes over their lives. The result when this happens is inevitably tragic.

I know that you will consider that this letter is nothing more than the rantings of a religious crank but I ask you again to consider your position. If only one person goes off the rails because of games such as this, that is one person too many. We must get these games banned now.
Peter Davies, Cardiff

Dear Peter,
No, I don't think that you are a crank. I am sure that you believe totally in what you write. I happen to disagree with your views that these games cause harm and I will try to explain why.

To start with, although computer role playing games have the same name as those games involving a group of people sitting round a table, there are substantial differences. To start with, c.r.p.g.s are for one player only and so there is none of the interaction found in the other games which you suggest can unduly influence someone.

The games are pure fantasy. To the best of my knowledge, every single one of them involves the forces of good trying to overcome those of evil. I see little difference in casting a spell to destroy an enemy temple (the name of the deity involved is an irrelevance, it is merely adding detail to the storyline) and firing a laser to shoot down a space ship. It is all make-believe.

Any sort of game offers the same sort of escapism as a book. No-one would seriously suggest that Agatha Christie books should be banned simply because one person tried to copy the murder in it and yet that is exactly what you seem to be advocating as far as the games go. I believe that if someone does over-react by taking these games too seriously, then that person is likely to be so mentally disturbed that any given set of external influences – reading a book or newspaper, or seeing a particular sequence in a film or on television is just as likely to trigger off the abnormal behaviour.

This is a serious subject, though, and one on what I am sure that our readers will have strong views. If so, please write in and let me know how you feel.

On a somewhat less controversial note comes this letter from **John Norwich** who is 13 and lives in North Yorkshire.

Dear Disk Dungeons,
I enjoy role playing games and would like to try writing my own. What I need though is a source of inspiration. I have read the *Hobbit* and *Lord of the Rings* and was wondering whether you could suggest any other good fantasy books.

Dear John,
To start with, a word of warning. Make sure that you use the books for inspiration only, and not as something to copy from. Companies writing games based on specific titles have to pay a lot of money for a licence and if you were to try to bring out an unofficial version of *Lord of the Rings*, you would very correctly find yourself in a lot of hot water. It is much better to be the first John Norwich than the second J. R. R. Tolkien.

Having said that, you only have to look at the bookshelves to see that there are hundreds of fantasy books around at the moment and only a few of them merit a permanent place in my library.

If you enjoy bad jokes and really awful puns, then try the *Xanth* series by Piers Anthony. He is currently working on the twelfth book in this series but the first three, *A Spell for Chamelon, Castle Roogna* and *The Source of Magic* are probably the best. Xanth is a land where everything has some sort of magical ability. It could be something useless like projecting a purple spot on the wall or something powerful like the ability to talk to inanimate objects. The books do not form a series as such but the same characters do keep popping up so it is probably best to start at the beginning. I have read all of them several times and still keep finding new jokes that I missed before.

If you prefer the quest type story, then try the *Belgariad* from David Eddings. This is a series of five books starting with *The Pawn of Prohpecy.* A young boy, Garion, gets drawn into a set of adventures and becomes an ever more unwilling participant as he discovers that he possesses some powerful magical abilities.

When I first started the series, I thought that it was going to be another *Lord of the Rings* clone but this was short lived and the books have a lot to offer in themselves. The second set of five books, *The Mallorean*, is nowhere near as good though, being effectively the same story rewritten.

Those books should keep anyone quiet for a month or two but again, if you are interested in more suggested reading material, then please write in.

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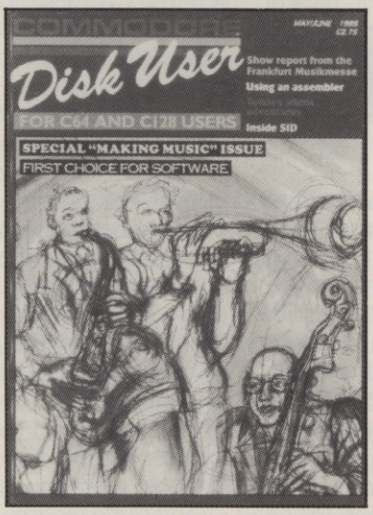

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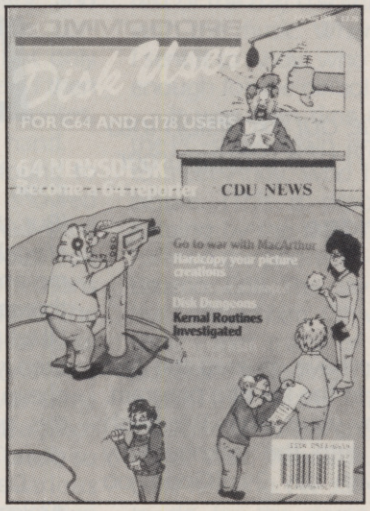

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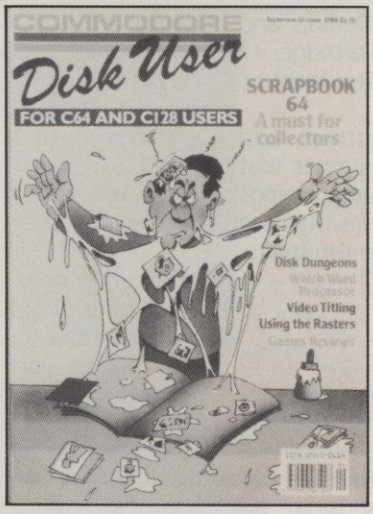

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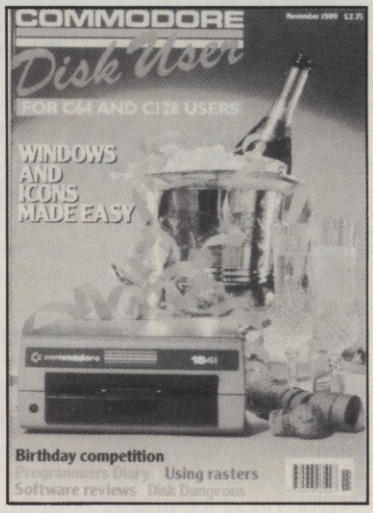

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Programmers Diary

We conclude our excursion into the mind (??) of a programmer

By A. Partridge

So far we have covered the first 23 days in the life of a program, coded by yours truly. We finish this little trip into the unknown by starting off with day 24. (Good job too... Ed!!)

Day 24...Had two tea's tonight. Went to my Girlfriends, had one tea. Then went home to find my mum had cooked me a massive steak... Who could refuse? What a fat pig. Hehehe! Turned out that Bizzmo's bit for the diary got lost in the post, and so didn't get published in the last magazine as I thought it would. Fear not! It is this issue now.... HAPPY BIRTHDAY TO ME! HAPPY BIRTHDAY TO ME...! So no work today!

Day 25... Moved the multi-background scroll into another part only to find it refused to work without flickering. Why, I couldn't work out. So I left the problem to my sub-concious mind to work out (Article on this soon...!!)

Day 26... Ah Ha! Woke up with the answer to my problem in my head! I was starting on a 1 delay instead of an 8 and so screwing up all my rasters. ARGH!

Day 27... Sorted out some display routines for Bizzmo's Hires Fantasy Pictures. I suddenly noticed that I'd written half a disk of routines and not found any use for them in the end. This is a WASTE of my time. I'm off to sulk.

Day 28... A much more productive day today. Got Pre-finish versions of Bizzmo's pictures to see and fit into my code. Very nice! Also got Bizzmo's text, so it's in this edition of the diary! (For certain this time!)

Day 29... Spent today tracking down the cheapest Amiga possible! Paul, El Editor, could get me one for £299, a place in Swindown could too (But they had run out) Next I found Megaland at £330 (they refused to give me any discounts for journalism, cash, threats, etc!) And the next was £349! I'll tell you all the outcome Tommorow, then you can all rush off and buy a cheap Amiga! (Excuse me Mr. A, whats this got to do with programming a demo???...Ed!)

Day 30... Megaland won! Got two Amiga's (One for Dave Fryer, my good mate!) for £645! Thats £322.50 each. Not bad eh? Now I can get lots of inspiration from Amiga demo's! So, as I finish for this episode, I'll leave my address again so you can contact me and send lots of Amiga Demo's and PD to swop. Bye! Andy. Partridge, 17 Well Close, Northway, Tewkesbury, Glos. G120 8RS.

(Editors, Readers, Mothers and Girlfriends are not the only ones that have to suffer the rantings and raveings of a programmer (??) it seems. Judging by the start Bizzmo's bit, he too suffers like the rest of us...Ed!)

Bizzmo's Bit!

So, after a long and expensive telephone conversation, mainly revolving around sheep and the like, I've agreed to do graphics for Andys demo. He was pretty vague on exactly what he wanted, he just said "You do the graphics and I'll code it!" Great.

After a couple of weeks, and a few more increasingly silly phone calls, we've actually got some ideas down on paper! Andy's very keen on the 'Female with large ones' bitmap idea. Oh well!

After a few hours of moving a sweaty mouse around, I'd finally managed to get something that looks a little like a human (And still maintains a reasonable level of decency!) The above mentioned object is reclining on a highly coloured 'EXCESS' logo. The next day, the picture is ready to send to Andy. (Blimey Bizzmo! You're so fast!) (Yes....he is. Bizzmo's Girlfriend, Edna.) This (sending Andy the picture) I do over the phone. It's more expensive, but it beats the post. And it means it actually gets there. Andy liked the picture, which is just as well, I wouldn't have done it again anyway! HaHa!

Whilst on the phone Andy tells me he is doing a new loader-menu, for the cover disk, and he will need some graphics for it! He needs a 2x3 character set which you can see through, a big 'Commodore Disk User' logo and some mountains to put behind the 2x3 characters.

Andy has just sent a preview version of the loader, and it looks really good. There is a great fade effect behind the lettering! (Which Paul made me slow down! SPOILSPORT, Andy). I sent the graphics for the loader to Andy, and he put them into the code, sent it back for me to make a few necessary adjustments, and then sent back again! (British Telecom were in hysterics, I bet).

I used to do most of my graphics on the 3 in 1 editor, now a bit dated, until Andy sent me some really useful utilities. I've now got one which allows you to design any size font (No more fiddling about in 3 and 1) and another that allows you to draw onto the screen in Hi-res mode, then convert it into characters! Makes logos dead easy to design. All my bitmap stuff is done on Artist 64 with the NEOS mouse. Trying to use a joystick again with Andy's new editor is really a pain! Everything comes out square!

The next thing I've got to do is design a 3x3 character set using the two multicolours, and the background colour for the font, and the actual colour memory as the background colour (WHAT?? – Ed.) This is for a really cool colour fade that Andy has done to be used on a scroller. It's MUCH easier to explain it when you see it than I did above! (Thank goodness for that).

Andy has just told me that Excess doesn't exist any more. He is now in a new group called 'CABANA' and as

a result he needs the logo that the woman is on, changed. After many attempts at changing the lettering, I gave up and re-designed the logo from scratch. At the same time I made a few improvements to the woman. I sent the new bitmap back to Andy. He also wanted a CABANA logo in characters. This I did on the new Logo Editor. It didn't take long at all to get some thing that looked very reasonable. Nice Editor! (No, not you Paul).

When it comes to coding I've only ever tinkered, but recently with the help of a 'Falcon', one of my mates, I've been getting fairly competant. So I thought I'd try to do a part for the demo. My idea was to have a disk (Three and a half inch, cos they are smaller!) spinning through 360 degrees on the palm of an outstretched hand. I think I've seen it done on the Amiga. The first thing I did was draw the disk. This was done in sprites. There were 8 animation frames, and sixteen on-screen sprites in every frame. (1,2,3.... Ah!) 128 sprite definitions in all. The rotations were calculated on the Amiga in Delux Paint I and then copied, using a sprite editor, to sprites. Took a couple of hours! The hand was drawn on artist 64. This didn't take so long. I then loaded it into the logo editor and converted it to characters. This corrupted some of the colours, but only some minor editing was needed. I then wrote the code to display 16 sprites, animate them and display the hand.

When I got it to work I found to my horror that the sprites showed through the hand where I had used multicolour 2. This meant I had to edit the sprites and cut out large sections of the sprites that were behind the hand. Took a couple of days! (HaHaHa! Plan ahead! Bizzmo – Andy). Finally I'd finished, and all it needed was some music to polish it off. I wanted a piece that came in slowly, track by track, so that I could fade on the various elements of the part. I had a quick listen to some music in a few demos, but decided that nothing was suitable. I phoned Deek, from Sonic Graffiti, and explained the problem. He said he would do the music. Great. Half an hour later Deek phoned, the music was complete and just what I wanted! (Now THATS service!). I then spent the rest of the day co-ordinating the fades with the music. When it was finished I sent it to Andy, who said it was good enough for the demo! Great!

It was then time to trundle up to the PC-show again, and I had arranged to meet Andy, who I had never seen before. (This is probably a blessing judging by the mad conversations we have on the phone!!) – (You are so right Bizzmo...Ed!). The day came and went but I missed him, Oh well, Maybe next year! I met many of my fellow compuneters, including ((Very) Little) Deek. I also met Mark Wilson, a brilliant musician, and got a copy of his latest music disk. Fantastic. Anyway, I am now waffling. I've still got a lot of work to do for the demo, a few fantasy pictures, character sets and the like so I suppose that it's back to work. Bye for now. See you again soon.

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Power Drift

Attempting apparently impossible coin-op conversions looks like becoming a Christmas tradition for Activision as it has now followed up last year's *Afterburner* with *Power Drift*. This was another sit-in 3D arcade machine that "would never be converted for home computers". Now you can play it on your C64.

Power Drift is an exhilarating 25 track buggy race that's got more in common with a roller coaster ride than a Grand Prix Circuit. Your aim is to survive as long as you can. You play any of the games 12 drivers in a series of three lap races in which you must finish in the top three to stay in the game. This isn't going to be easy as the tracks twist and bend and throw in the odd jump to see if you're paying attention. One wrong move here and you'll undergo some involuntary aerobatics due to a mid-air collision. However, you can forget about claims forms and no-claims bonuses and get straight back into the action.

The game is just one of a new breed of 3D car racing games that the humble C64 struggles to cope with. Sure it has the speed that some of the more expensive lack but at times the graphics let the game down as blocks hang in mid air.

Throughout the game the display shows your view in front of the car, your current time, score and position in the race. This last figure is vital as it lets you know how much you have left to do to qualify for the next race. For example, if you're currently second then you can take things steady and round corners with care but if you're 7th or 8th it's time to put the pedal to the metal for a last ditch do or die attempt.

We'll have to see how *Power Drift* compares with other racing games such as Domark's Hard Drivin' but if you like fun and heart pounding action it's got off to a flying start.

Title: Power Drift
Supplier: Activision, Blake House, Manor Farm Road, Reading, Berks, RG2 0JN
Tel: 0734 311666

Graphics: Stretched to their limits and gaps are beginning to show
Sound: Nothing too surprising
Playability: Pick up a joystick and go!
Addictiveness: It's great fun

Lord of Darkness

A fantasy game that is deceptively different

By R. Nielsen

Oil up your armour, shine up your sword and get ready for *The Lord of Darkness.*

In this fantasy game you control a group of 5 brave adventurers, a Warrior, Cleric, Amazon, Hobbit and Sorcerer through the evil Lord's fortress of 6 levels.

The Lord has many hordes of goulish monsters which you must kill and then you will be able to battle the Lord. Meagre weapons will not harm him. Your only chance is to find as many of the six sacred relics which are hidden throughout his den. These relics consist of *The Armour Of Eternity, The Book Of Dragons, The Cloak Of Virtue, The Dagger Of Fire, The Eye Of Opals* and *The Flag Of Purity.*

When you run the game you will be shown full instructions and then asked to input three names of the characters. After a short wait the game begins. Your party starts at the top left hand corner of level 1. Plug your joystick into Port 2 to move your party around. There are three types of caves.

EMPTY – A cross with a plus sign in the centre – these are empty.

STAIRCASE – A cross with an equals sign in the centre – denotes a stairway.

ENCOUNTER – A diamond with a question mark in the centre – contains either a monster or a chest.

When you reach a staircase you may press **U** or **D** to go either up or down a level. The monsters get tougher the more levels you descend.

When you find an encounter cave there is a chest in it which you can open with **O**. Occasionally something will jump out but usually you will find something. You can eat or drink by pressing **F**. When you come across a monster in a cave you have one of two options open to you.

You can press **m** to use magic. You can only use magic if you find a spell in a chest. You will be asked for the kind of spell you wish to use. Press the initial letter of the type of spell you want to use. For example **C** for a spell of cold.

Alternatively, you can press **B** in order to do battle with the monster. You will be asked who is to do battle and the strength. Type the initial letter of the character. For example H for hobbit, they then do battle.

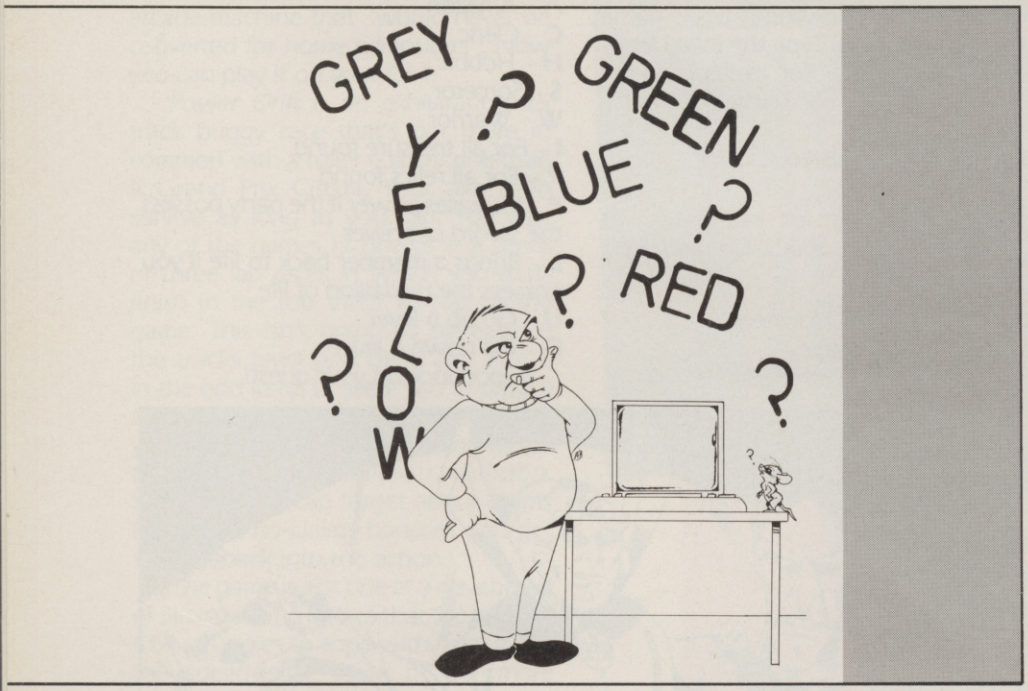
Quick Command Chart

Joystick up, down, left and right moves your party North, South, East and West accordingly.

B – Battling with monsters
M – For using magic
I – For characters strengths
O – For opening chests
F – Feeding on edible chest contents
A – Amazon
C – Cleric
H – Hobbit
S – Sorceror
W – Warrior
I – For all treasure found
R – For all relics found
P – Increases power if the party possess the sword of power
L – Brings a member back to life if you possess the medallion of life
U – Go up a level
D – Go down a level

Good luck on your quest!

Selective Colour Restorer



Fed up with the standard Blue on Blue screen colours? Select your own with this handy utility

By Jason Finch

The colours chosen by Commodore for the screen on the C64 are acceptable but the pale blue text colour can be difficult to see on a monochrome screen. You may also have become accustomed, through the use of a certain word processor or spreadsheet to preferring a different set of colours for border, background and text. When programming for long hours you may find greys more restful on the eyes. A simple thing such as choice of colours can make a great deal of difference.

That's why I have written *Selective Colour Restore*. You can choose which of the 4096 possible colour combinations of border, background and text will be selected when the screen is restored. As I am sure you know, pressing RUN/STOP and tapping (or in the case of some keyboards – hitting!) RESTORE at the same time, will change the screen, I/O devices, the SID chip and so on, to their status on power-up.

With this utility by pressing just RESTORE on its own you can perform the same sort of operation. You should note, though, that the I/O devices are not restored. You should therefore never use this customised restore during the saving and loading of programs on tape or disk. This should not create too many problems, but if it does, revert back to the normal screen restore by holding the RUN/STOP key when you press RESTORE – it's as easy as that!

As with any machine code routine there is always going to be the problem of location. There are people that will want to use the infamous block of 4K at 49152 ($C000), whilst Basic users may not wish to lower the top of the Basic programming area. However, the code on the disk – filed as 'SCR-CODE'' – loads to 49152. The accompanying Basic program allows you to relocate the code to anywhere in the memory and to save the code to your own tape or disk. Relocated code can only be saved to disk as it is the start of file pointers that are changed on the disk.

The code in memory is simply changed, not transferred to the new relocation point. If you do wish to transfer the code as well then there is also an option for that. This allows you to relocate code to within the Basic area without disrupting the program. If you have not changed the location of the code then you can save to tape as well as disk.

If using a disk, which is extremely likely considering you have purchased a 'disk-based' magazine, then you also have the option of having the code autoboot. That is, when the code has loaded, the colours will be changed and the routine initiated automatically.

Before saving the code you can also change the default set of colours so that your choice will be selected when the routine is initiated.

In the following descriptions I shall assume that you have left the code at 49152. to initiate the routine type 'SYS49152'. Unless the code has just been 'autobooted' you will then need to press RESTORE (on its own) to obtain your colour choice. This SYS command needs to be executed whenever the normal restore has been used and also if the code does not autoboot.

'SYS49155' will switch off the routine so that the customised restore will no longer work.

To change the colour combination for the next and subsequent restores type 'SYS49158,x,y,c' where 'x' represents the border colour, 'y' the background colour, and 'c' the colour of the text. All these should fall in the range 0 to 15. Any higher numbers are treated modulo 16, ie: 16 is the same as 0, 17 the same as 1, etc.

One word of caution – the routine works by changing the Non-maskable Interrupt Vector at 792 and 793 ($0318 and $0319). Your program should therefore not change these if you wish the routine to work.

I think that's about all the details on operating the routine. To load the Basic program from outside the menu type LOAD'COLOUR RESTORER',8 and then RUN. The code will then be loaded. To load the code from outside the menu type LOAD'SCR.CODE'',8,1 and then SYS49152 to initialise it. Any code saved by the program will be filed as 'SCR.CODE xxxx' where xxxx represents the start location of the code.

Jetrace 2000

Can you prove your prowess as the worlds best Jetracer. Take up your joystick and accept the challenge

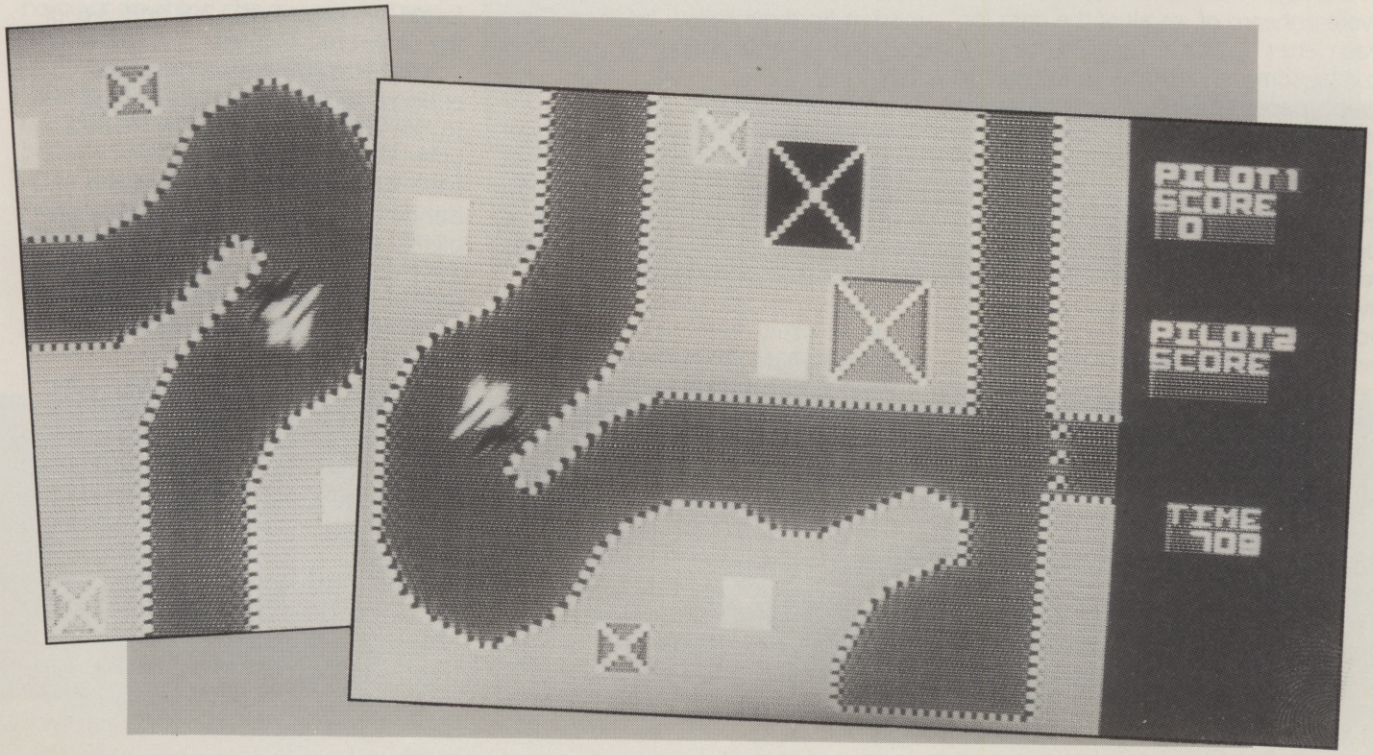
By Mark Judge

I should think that by now everyone in the world agrees that when writing arcade games machine code is what is needed, Basic is just too slow. However, I have tried to prove that Basic CAN be used to good effect in such software. The game you are about the play is written mainly in Basic then compiled to help speed things up a bit. I think you will agree that the end result is quite acceptable.

The game can be played by either 1 or 2 players. The idea behind it is very simple. You race against time, and another player in 2 player mode, to get your Jet from the starting grid to the finishing line, represented by black strips with chequered flags on both sides. There are 21 screens in total which are all fairly difficult and challenging.

You use a joystick in Port 2, for 1 player mode and Ports 1 & 2 if in 2 player mode. Control has been kept as simple as possible. Move the joystick forward to increase speed. Pull it back to decrease speed. Move the stick right to rotate right and left to rotate left.

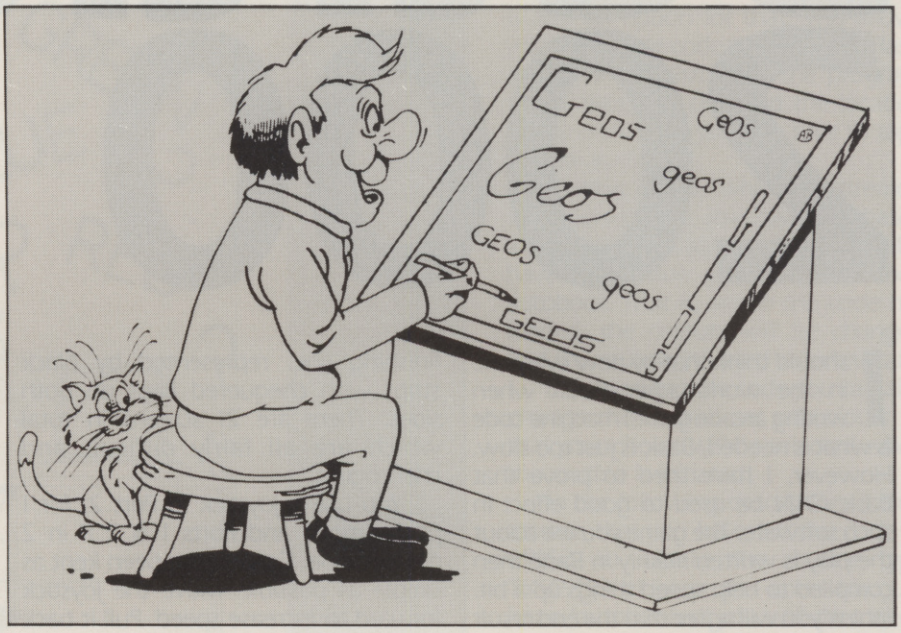
For those of you that are interested here is an interesting programming point. The most difficult part of programming sounds very easy, but it is in fact tediously complicated. This is the delay undertaken when one plane goes onto the next screen before the other. Two timers are needed. One to time the amount of time it takes for the second plane to go out of the screen, which then counts down the time until the second plane reappears, and a second one to take the time on the first counter if the first plane should go out of the screen before the second plane reappears. The second time taken is then added on to the time taken for the second plane to follow the first onto the next screen. (Phewww!! is this guy a politician.....Ed!).



Geos Fonts

Over the next 3 months we give you 12 extra fonts that you can use with your Geos Utility Program

By Brian Sedgebear



Unfortunately there is not a lot of non-Berkeley software for use with Geos about even though **Berkeley Softworks** have provided both Geos environment assemblers and a Geos programmer's reference manual, in an attempt to encourage programmers.

So here, although not a programme, I have provided four new fonts for use with *Geowrite* or *Geopaint* on either the 64 or 128. Over the next 3 months I will be providing you with a total of 12 fonts that will build into a useful set. All of these fonts were produced nearly two years ago in the days when font editors for Geos were unheard of, so all of the data for each letter had to be entered in a very cumbersome way using large sheets of graph paper to design the characters which form the complete font, but the results, I am sure you will agree, are very satisfactory. I would not recommend doing them by hand as a great deal of knowledge about Geos is required and with the font editors available today, life is much simpler. If you do want to understand the workings of Geos fonts, I would suggest reading the Geos Programmers Reference manual, page 128, or perhaps *Geos Tricks and Tips* by **Abacus.**

Advantages

The fonts produced have a couple of advantages over Berkeley fonts, as unlike most of the extra fonts available from Berkeley, they provide every possible character available through Geos key definitions. They also provide the very illusive pound sign which can be obtained by holding down the Commodore logo key and pressing the asterisk key. If you use *Geocalc* or *Geofile* and curse at Berkeley for not providing a pound sign in the standard BSW font, dig out the April '88 edition of *Your Commodore* and look at the submission from me called *"Making Geos British"* to install a pound sign and solve the problem.

User Instructions

Geos allows the use of a maximum of eight fonts at any one time within an application. The font BSW is the system font and hence is always available so you can choose a further seven fonts for use.

Subject to disk space, you can include as many fonts as you wish on your work disk, but only the first seven on the desktop will be displayed in the font menu. To copy any of the CDU fonts if you are not used to Geos please read on.

First load Geos and using the desktop open the CDU disk. It will ask if you wish to convert it to a Geos disk whch can be done without affecting the other software on the disk. Click the pointer twice, slowly over the required font icon and move the pointer to the border. The icon will follow, again click the pointer. Now change to your destination disk and open it. To start the copying procedure simply click on the font icon in the border twice and move it onto the desktop and click once more. The copy process will now begin so simply follow the instructions. Further information can be found on page 2-19, 3-5 and 3-6 of the Geos User Manual.

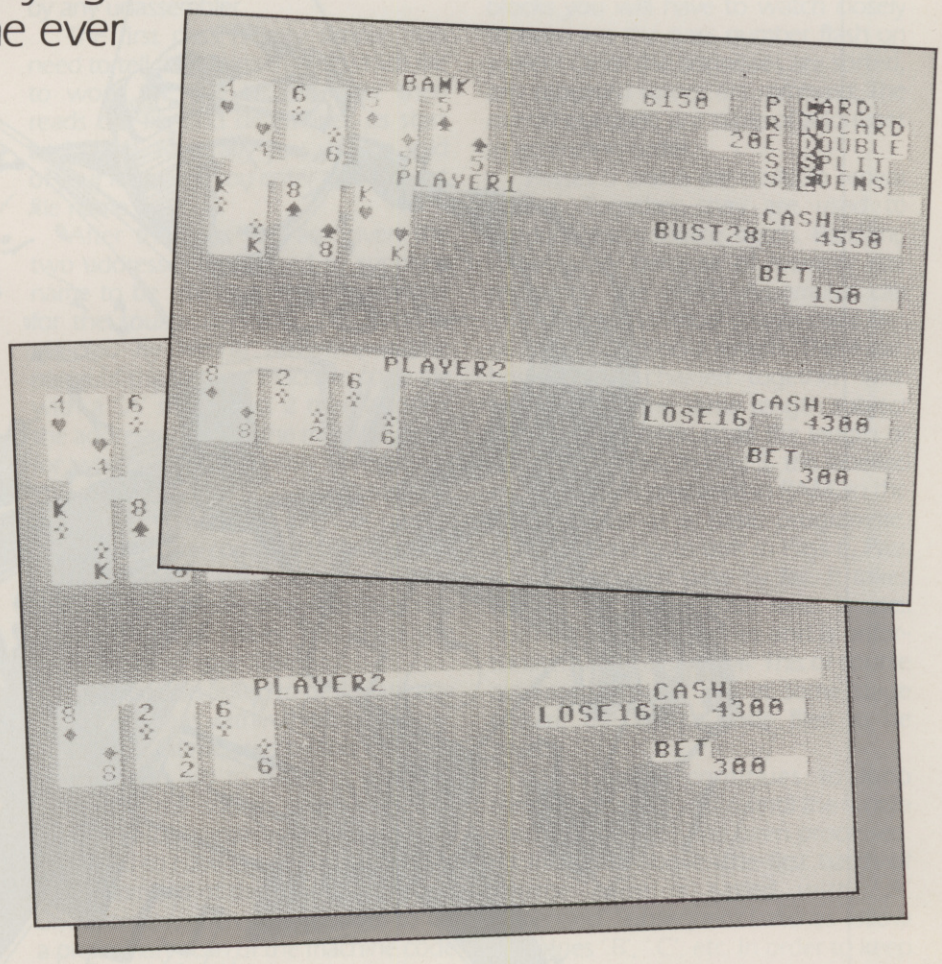
All Geos fonts have their own identity codes which enables applications to use more than one font per document. All of the new CDU fonts also have i.d. codes which follow the existing Berkeley codes, so they are completely compatible with Geos and all the existing fonts. All of the usual underline, bold, italic, outline, superscript and subscript styles are available to interesting effect.

I hope you like both Shadow and Analytical (thanks First Analytical for your assistance in the past) and will look forward to more fonts that CDU will include in future issues. Some of which will be multi-size fonts and one provides symbols for use on your letters. P.S. Some of you may not have discovered that by holding the Commodore logo key and pressing either the $, /, up arrow, :, ; or asterisk keys you will unveil a few other characters. Perhaps next time I will get time to go into a bit more depth on Geos.

Blackjack

Don't lose your shirt playing this computer version of the ever popular card game

By N. Sykes



It's Friday night and you've had a hard week at work. Your wife/girlfriend has made up mountains of sandwiches. The fridge is full of the amber nectar. The table is laid out and you are busy shuffling the cards.

If this scenario sounds familiar to you then stand by for an entertaining evening of card playing with a difference. You may well lose at this version of 'Blackjack' but you can rest assured that you won't lose your shirt, car, home or anything else, except perhaps your pride.

In case you are unfamiliar with the rules for Blackjack, I will briefly outline the idea behind the game. Each player is dealt two cards. The idea being to make a score of 21 or near as possible. Aces count as 1 or 11 depending upon the circumstances. After the cards have been dealt no-one will have a score of more than the required 21. Each player takes his turn to decide whether or not he wishes more cards to increase his score value, or to stick with what they have. After all players have had their turn the dealer then reveals his cards. He may deal himself more cards just as the other players with one exception. The dealer MUST deal another card if his initial score is 16 or less. This gives the players slightly better odds of winning the hand. When the dealer completes his turn, any player whose cards add up to more than the dealer's wins. Unless the dealer himself has been dealt 21.

In this computerised version I have stripped out a lot of the finer points of the game. Buying extra cards, paying out specific odds, extra odds for a Royal pontoon etc. The following is a breakdown of the rules for this version.

The bank must draw extra cards on a score of 16 or less. The players may stick on any score they desire.

Blackjack is the best hand and comprises of a score of 21 with 2 cards only.

To place a bet you use the keys 1-9. Key 1 will place a bet of 50, 2 places a bet of 100 etc up to 9 which will bet 450. Key 0 will place a bet of 500 this being the maximum you can bet on any one hand.

If you wish to be dealt another card press 'C'.

If you wish to stay (stick) press 'N'.

Cards of the same value may be split once, except for 4, 5 or 10. If aces are split you receive only one card. Press 'S'.

If you score Blackjack and the bank has an ace you can take even money by pressing 'E'.

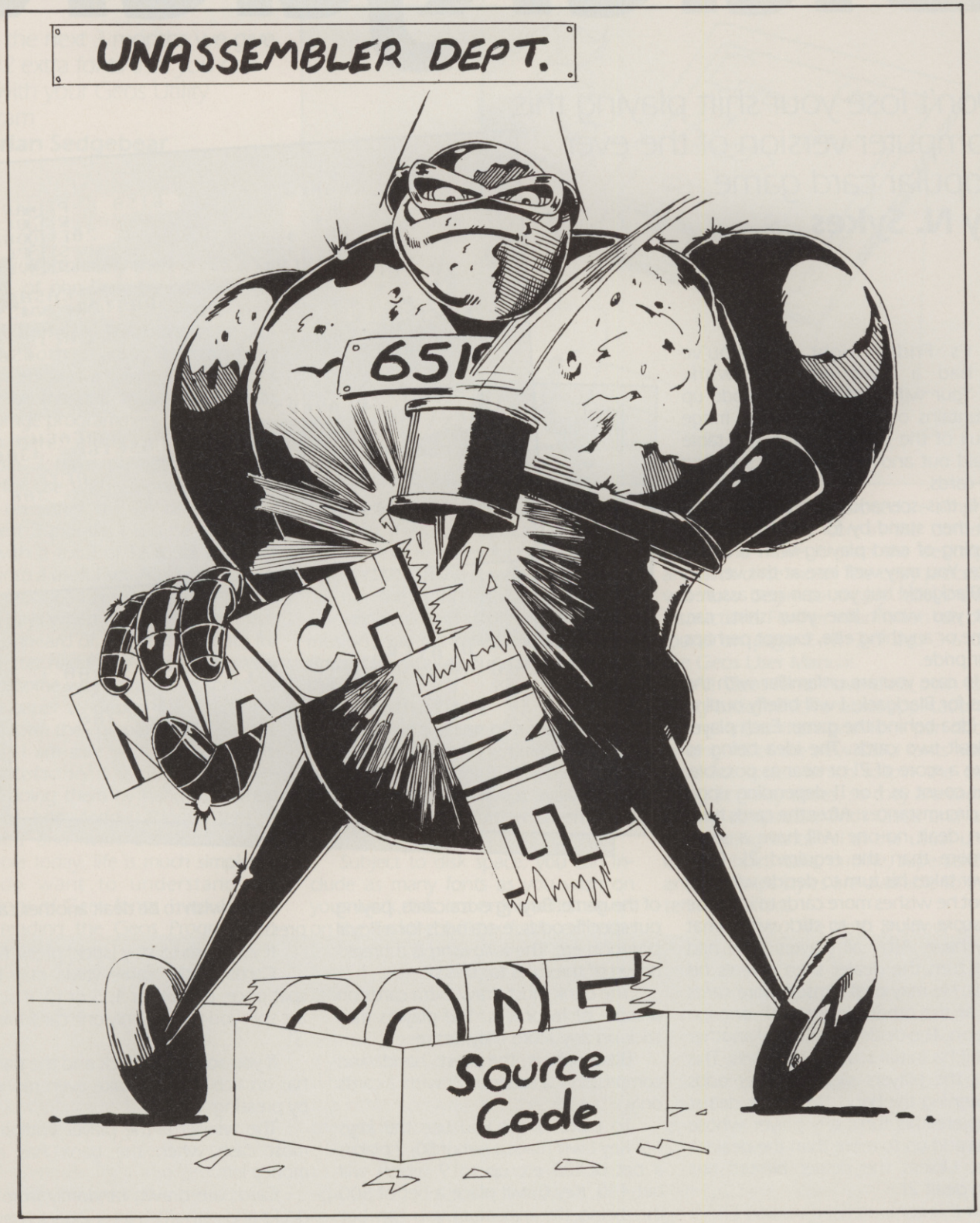
The winner is the player with the most cash when the bank has no money left.

Cards are drawn randomly from 4 decks and reshuffled after 2 decks have been dealt.

Now you can produce readable code from your machine code files

6510 + Unassembler

By Mike Gregory



I should imagine that you are asking yourself 'Why have an unassembler'? One of the first utilities a machine code programmer requires is an 'assembler'. The 6510+ Assembler package recently released by CDU (see July 1989 disk) is a good example. It basically allows a programme in the form of pseudo-code to be converted to executable machine code. The process can be likened to compiling a Basic programme using Petspeed except that the original pseudo-code is non-executable. A full description of the process and the format for the pseudo-code is given in the CDU article. The pseudo-code is generally referred to as 'source code'.

The value of source code lies in the ease with which the inner workings of the programme can be understood and the ready ability to alter, hopefully for the better, those workings. Adding a few more steps or changing the destination of branch instructions is simply a minor amendment to the source code followed by assembly to produce a whole new programme. It's akin to adding a few words or even paragraphs to a letter which you have on a word processor!

For programmes which we have written for our own use, the source code is obviously available. However for those which have come from public domain, from magazines or even from the commercial arena, it is usually not available. Often we have need to modify such programmes so that they better meet our needs. It may be that we would like to change the screen layout or even allow for a second disk drive. There are many legitimate reasons as to why we might want to change someone else's programme. In these cases we need to do some 'hacking'.

One utility required to be a successful hacker is an 'unassembler'. This is a special programme which undoes the work done by an assembler. It converts machine code back to source code, in a form which can be edited as required and then re-assembled. This particular program, the 6510+ Unassembler, works to complement the 6510+ Assembler. I thought of calling it the 6510- Assembler but decided against it. This way, with a little hacking, it should be possible to modify Dave's terrific intro routines to fit the Unassembler! Just kidding, Dave.

How is it done?

The easiest way to follow what goes on is to give a description of what happens during each Pass. I have broken down the unassembly process into a series of blocks each of which I have called a 'pass'. While this description really only relates to the 6510+ Unassembler the processes involved would need to be carried out by any unassembler.

The first pass is very simple. You need to tell the Unassembler which file to work on. The Unassembler then reads the file and determines its start and finish. Naturally you will be told of your mistake if you enter an incorrect file name.

After this pass you are given the two addresses and asked to supply a name to be used by the Unassembler for the source code file. The default, selected by hitting RETURN, is the name of the original machine code file with a '.A' suffix. Pass 2 then asks for the addresses within the machine code for which an unassembly is required. You need to supply an unassembly start address which may or may not be the default machine code start address. The entry routine allows you to enter either decimal or hexadecimal numbers but will not accept values less than the machine code start address.

You are also asked to designate any non-code areas within the unassembly. Do not be intimidated by this because it is only an aid to avoiding spurious coding in the source code listing. In order to supply appropriate values, you will need to have used the DISASSEMBLE command of the 6510+ Assembler or a monitor, such as Mickmon, to do a preliminary scan of the machine code to detect any word or text tables. If you do enter any table addresses, the Unassembler will continue to prompt for more. Hitting RETURN on its own will get you out of the loop.

Finally, you are asked for the unassembly finish address and again there is a default value corresponding to the end of the machine code. In many cases, particularly for short pieces of code, you will only need to accept the defaults to complete this pass.

In Pass 3 the Unassembler reads through the section of machine code which has been selected for unassembly and collects all of the addresses which are used within the code. These may be either absolute or zero-page addresses and the table produced will form the basis for the symbols and labels used within the source code file. The addresses are simply collected as they occur in order to speed up the pass.

The next pass uses a 'quicksort' algorithm to sort the addresses into ascending order. This is a very fast sort and for machine code of only a few blocks you will have to watch closely to even see the pass number flash on screen! Once the addresses are sorted, any repeated values are removed. The overall outcome is a table of addresses in ascending order.

Passes 5 and 6 are multiple repeat passes. Together they are used to produce each source batch. Batching is necessary because of memory size restraints. The 6510+ Assembler can only handle individual source code files of about 106 blocks length. These can however be chained together with more files of the same length subject to a final machine code file length of about 48 blocks. In Pass 5, the labelled source code is prepared in RAM, in the same format as a Basic programme, ready for saving to disk in Pass 6. Pass 6 is the slowest pass by far. It takes over a half of the total time. It uses normal KERNAL routines and is unfortunately a necessary evil. This of course assumes that you will at some stage require the source code files to be saved!

Unassembly continues to loop through Passes 5 and 6 until the whole machine code file has been processed. As indicated above, the first batch of source code is saved with '.A' appended. Subsequent batches follow the series '.B', '.C', etc. In order to keep the number of batches to a minimum, and hopefully in many cases to restrict it to a single file, batch size is set to about 104 blocks. This assists in speeding up re-assembly rather than having any major benefits in unassembly.

During Pass 5, labels are produced from the table of addresses collected earlier. As each label is used, its address entry in the table is set to zero. If the programme counter exceeds the current label address, the address pointer is incremented and the address stays in the table. Pass 7 now tidies up. It prepares and saves a library 'equates' file made up of all the unused labels

in the address table. A word of caution, at this time this file is always named "EQUATES". If you are doing more than one unassembly on the disk, use the DOS rename command to change this file name (R0: newname-=equates).

The art of unassembly

Since the main purpose of this utility is to produce a source code file which you can study and edit at your leisure, it will obviously be beneficial if spurious coding is avoided wherever possible. By spurious, I mean the sort of code you see when dissassembling text tables and the like. It is not intended to be a code area and usually produces many lines of BYT values or '???' marks. Try the DISASSEMBLE command at $A000 and you will see what I mean. These regions unfortunately also produce sections which superficially appear to be proper code and therefore will also generate useless labels. Look at the dissassembly at $A013-$A01B for an example. Unassemblers start off by treating the whole machine code file as proper codes. Most do not allow user input of known non-code regions. You are expected to edit them out afterwards.

The 6510+ Unassembler allows you to enter a series of such regions. It will accept over 60. The easiest way to detect these regions is to do a preliminary scan of the machine code using the DISASSEMBLE feature of the Assembler. Make a note of the start and finish addresses of any odd-looking code portions. I should mention that you do not need to be exact in this scan, although accuracy will reduce the amount of source code editing later. In many cases it is not even essential that tables be designated. It all rather depends on how attractive you wish to make the final source code file. The utility is there to help you whether you want it or not!

Once the primary source code is produced, the hacker's real work starts. The code has to be studied and edited. The primary labels are formed directly from their address in the machine code. Well written source code however uses meaningful names for labels so that, for example, the process involved in a subroutine called 'GETDIR' is obvious. The editing is done using the 6510+ Assembler, particularly the CHANGE string command. Many comments will be added to source code lines so that the programme's workings can be followed. Also any undetected spurious coding will be converted to BYT tables. These three processes will be found to work together. As lines are commented and meaningful labels added, the programme logic will begin to appear. As it appears, comments and labels can be added with greater confidence. Working the three together makes up most of the art. As indicated above, the extent to which editing is carried out will depend upon your reasons for requiring the source code. Many simple changes can be made with a minimum of editing since it is often only necessary to change small sections of the original machine code.

Wrap up

The best way to acquire unassembly skill is to do it. Try working through some of your own code, or at least

code for which you have source, in order to get a feel for what the Unassembler does. Listing 1 is supplied as an example for you to work with.

LISTING 1

```
1000 CLEAR=$93
1010 SYS=$9E
1020 STROUT=$AB1E
1030 CHROUT=$FFD2
1040 ;
1050 *=$0801
1060 ;
1070 WOR LINK
1080 BYT 10,0
1090 BYT SYS, "2061",0
1100 LINK WOR 0
1110 ;
1120 LDA #<TEXT
1130 LDY #>TEXT
1140 JSR STROUT
1150 JSR PAUSE
1160 LDA #CLEAR
1170 JMP CHROUT
1180 ;
1190 TEXT BYT CLEAR, "HELLO
WORLD",0
1200 ;
1210 PAUSE LDY #0
1220 LDX #0
1230 P1 INY
1240 NOP
1250 BNE P1
1260 INX
1270 BNE P1
1280 RTS
1290 ;
1300 END
```

Try assembling it and then unassembling. Don't forget to save the assembled code by using

MONITOR followed by
S"name",08,0801,0835
Look at the assembled code in RAM using
DISASSEMBLE $0801

Remember to use the SHIFT/LOCK key to pause the listing. Hit RUN/STOP to end it. If you have a printer, make a hard copy using the
sequence before the DISASSEMBLE command. You may have to switch off the printer to avoid too much listing particularly if it has a data buffer!

You should be able to pick out the main sequences in the disassembly. Try the unassembly with and without using the table feature. Remember to rename the equates file in between! Compare the Unassembler output with the original source and with the disassembler output. The disassembly and unassembly should be very similar except that the unassembly has labels made from addresses prefixed by 'KK'.

If you have a basic understanding of machine code, the process is not hard to follow. Among other things, you will find that your own programming can be improved by studying how other people's code runs. Good hacking.....

4 in a Row

Challenge a friend in this 64 version of the popular game 'Connect 4'

By M. Carroll

4 in a Row is a reproduction of that popular game where you have to get four of your pieces in a row, complete with tournament facilities and an optional computer opponent. Full hires graphics and a little machine code are all included in the program.

When the program is first run you will be presented with a title screen displaying the following options:

S – Start game;
C – Change options;
V – View current options.

Taking the above in reverse order, this is what they do.

View Current Options

This displays what options are currently selected for the game, chosen by the 'Change options' section. The default settings are for a 1 player Single game.

Change Options

Number of players – Press either 1 or 2. If there is only 1 player the computer takes on the roll of player 2.

Tournament or Single game – Press either 'S' for just one game, or 'T' for a tournament.

If a tournament is selected, you must specify how many games need to be won to with the tournament. This has a maximum of fifteen.

Start

This starts the game. Throughout the game, the computer converses with you through a variety of 'noises'. The first one you will hear is like a gunshot, and it precedes every game. It is asking who is going to move first, player 1 or player 2. You decide this by pressing 1 or 2. The other gameplay noises are.

Ping – Player 1's turn.
Twang – Player 2's turn.
Seven pings, each one lower than the last – The computer is thinking.
Steadily descending pitch – Game over.

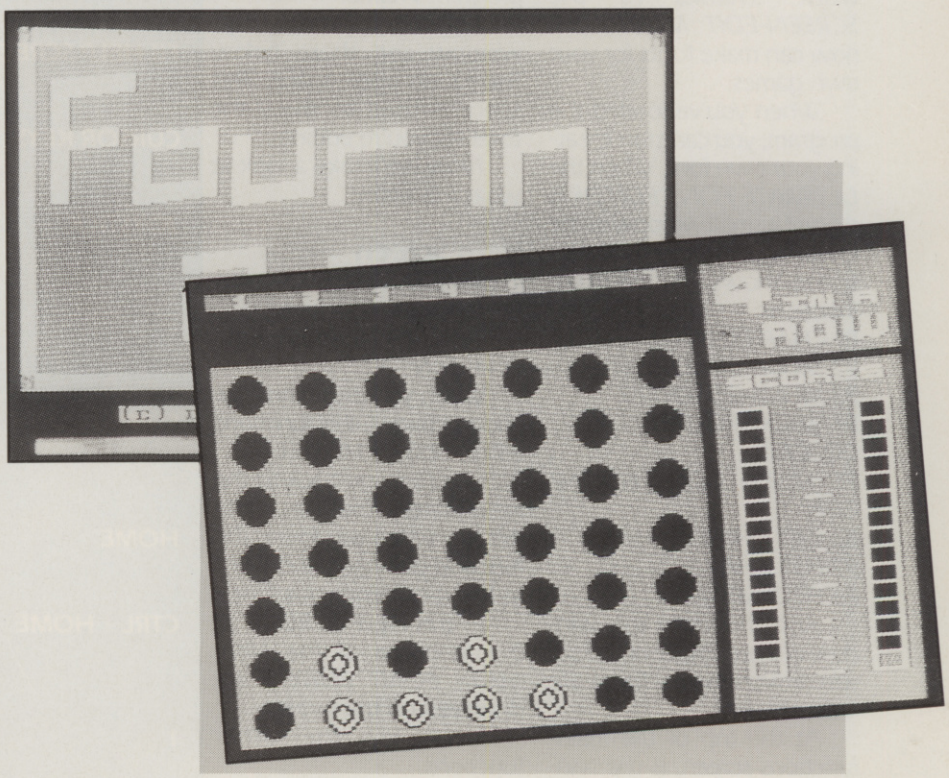
If you forget whose turn it is, press the *Spacebar* to hear the noise again.

By now, you will have noticed the scores along the right hand side of the screen. Player 1 has the blue column, player 2 the red, corresponding to their counters colours. They would be laid out like this on a five-game tournament.

```
- Black - - Black -
- Black - - Black -
- Black - - Black -
- Black - - Black -
- Black - - Black -
- Black - - Black -
- Black - - Black -
- Black - - Black -
- Black - - Black -
- Blue  - - Red   -
- Blue  - - Red   -
- Blue  - - Red   -
- Blue  - - Red   -
- Blue  - - Red   -
```

The black blocks are not used for this session, the blue and red blocks indicate the number of games that must be won to win the tournament. As each player wins a game their score colour creeps up from the bottom of the score table. When all the coloured blocks have crept up they have won.

To drop a counter down a column, press the number of the column you have chosen (shown in the blue bar just above the columns). Pressing F8 (Shifted F7) will abort the current game/tournament in progress. If you play against the computer, which is not hard to beat, you will notice that it can take some time for it to make a move. To speed this up considerably use a C128 in 64 mode. Do not use RESTORE or a DIY reset button to breakout of the program, the computer will hang up if you do.



Ultimate Font Editor

The easiest to use yet the most powerful Font Editor you'll ever need to compliment your software library

By Arjan Mensch

There are all kinds of ways to create your own font. You can make a Basic program and enter datas or you can write an assembler program which transfers the original set and changes it.

The easiest thing to do is to use a font editor.

This *FONT EDITOR* is the most easy-to-use font editor you'll find. It's 50 functions help you create the font you want. Thanks to the *SCREEN-EDIT MODE*, you now can make fonts for your own games.

When you've loaded the program, you can start creating your own font. When the *ULTIMATE FONT EDITOR* is started a small window in the lower-right corner of the screen shows you the main-functions:

F1 CHAR COLOUR
F2 MULTI COLOUR 1
F3 MULTI COLOUR 2
F4 BACKGROUND COLOUR
F5 MULTI COLOUR ON/OFF
F6 GET CHAR
F7 PUT CHAR
F8 HELP MENU

Also shown in this window is the number of the set you're working in. There are four available.

At the top of the main-functions screen, is the window where the char is shown that is in the COPY-MEM at the moment.

On the left of that window is a window in which is shown whether the COPY-MODE is on or off.

Below this window there are two more. In the left one, you're editing a char with your joystick. In the other the current colours are shown.

On top of the screen there's a window with the program's name.

Between the top-window and those below there's an open space. This space is used to show the total set you're editing.

Now we'll take a look at what's available,

Help Screen

In the HELP SCREEN you can do two things:

1. Press SPACE to see the other page.

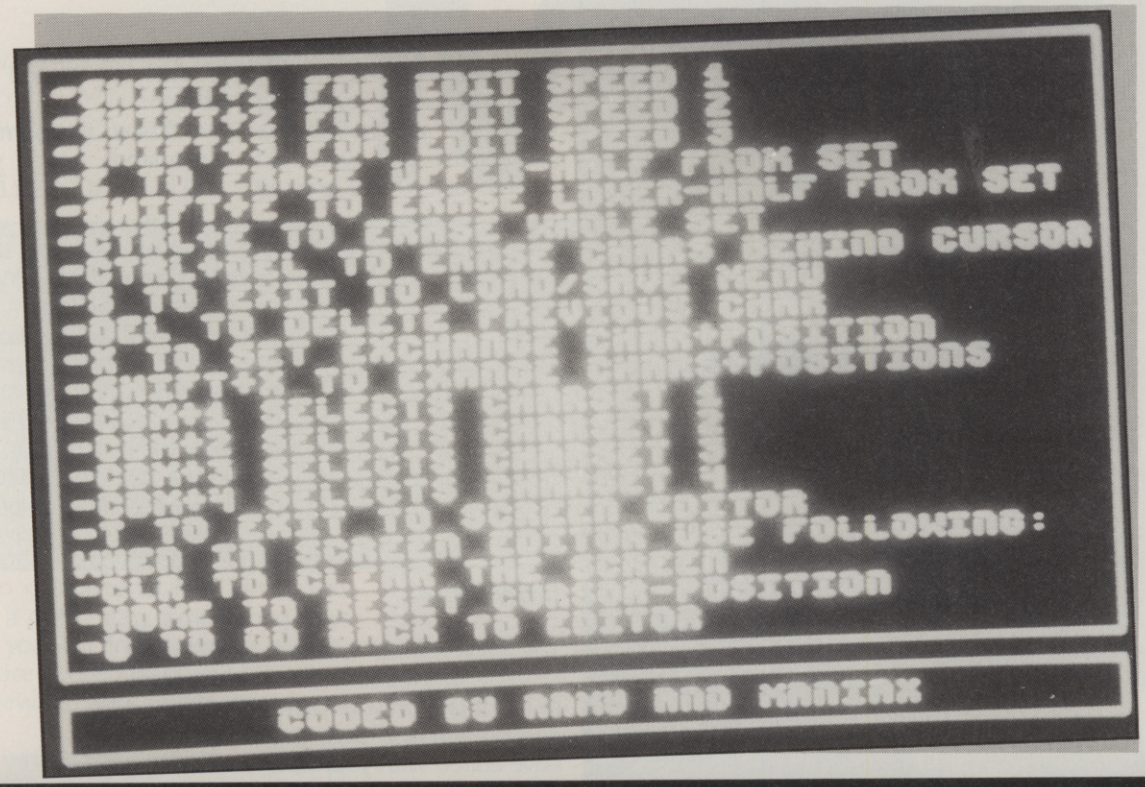
When you press this key, another page full of functions will be showed to you.

2. Press F1 to go back to the main-editor. You can press this key when you found the function you need and want to use it creating your font.

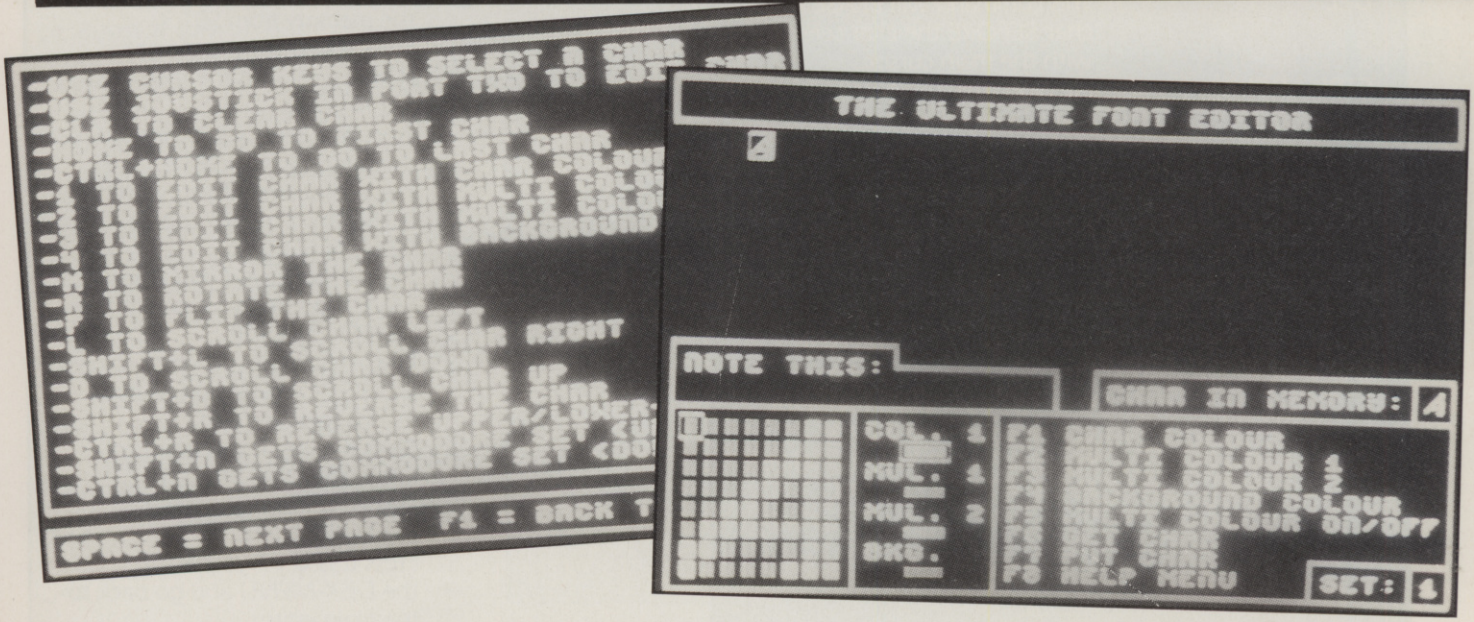
In the HELP SCREEN all the functions of the *ULTIMATE FONT EDITOR* are displayed on the screen.

Now for the other functions.

F1 CHAR COLOUR	Pressing this key will increase the current char colour. (When MULTI-COLOUR is on, you can only use colours 0-7, when it's off, you can use 0-16.)
F2 MULTI COLOUR 1	This function only works if MULTI-COLOUR is on. (All colours can be used.) When pressed, it increases MULTI-COLOUR 1.
F3 MULTI COLOUR 2	This function also only works if MULTI-COLOUR is on. (Again all colours can be used.) When pressed, it increases MULTI-COLOUR 2.
F4 BACKGROUND COLOUR	Pressing this key will increase the BACKGROUND-COLOUR. (This is only visible in your edit-window and in the SCREEN-EDIT mode.)
F5 MULTI COLOUR ON/OFF	This function switches between MULTI-COLOUR (4 colours) and SINGLE-COLOUR. (2 colours).
F6 GET CHAR	If you press this key, the char marked by your cursor is transferred to the COPY-MEM. (This is shown in the "NOTE THIS" – window.)
F7 PUT CHAR	This function moves COPY-MEM to the char marked by the cursor. (The char marked by the cursor will be lost.) This function can be used as many times as you wish. Everytime you press F7, the COPY-MEM will be transferred. (This means you can also transfer chars from set to set.)
F8 HELP SCREEN	If you press this key, your screen changes into one big window full of functions.
CURSOR KEYS	Use these keys to move the main cursor around to select the char you want to work on.
JOYSTICK	With a joystick in port 2 you can edit the char you selected with the CURSOR-KEYS. Using the joystick you can also select another char, but this is much slower than using the CURSOR-KEYS.
SHIFT+HOME	Pressing these keys will totally erase your char. (Unless you stored it in the COPY-MEM this char will be lost.)
HOME	When you've pressed this key, the main cursor will be positioned on the first char of the set.
CTRL + HOME	This is the opposite of the previous function. After pressing these keys, the main cursor is on the last char of the set.
1	Press this key if you want to edit


-SHIFT+1 FOR EDIT SPEED 1
-SHIFT+2 FOR EDIT SPEED 2
-SHIFT+3 FOR EDIT SPEED 3
-E TO ERASE UPPER-HALF FROM SET
-SHIFT+E TO ERASE LOWER-HALF FROM SET
-CTRL+E TO ERASE WHOLE SET
-CTRL+DEL TO ERASE CHARS BEHIND CURSOR
-S TO EXIT TO LOAD/SAVE MENU
-DEL TO DELETE PREVIOUS CHAR
-X TO SET EXCHANGE CHAR+POSITION
-SHIFT+X TO EXANGE CHARS+POSITIONS
-CBM+1 SELECTS CHARSET 1
-CBM+2 SELECTS CHARSET 2
-CBM+3 SELECTS CHARSET 3
-CBM+4 SELECTS CHARSET 4
-T TO EXIT TO SCREEN EDITOR
WHEN IN SCREEN EDITOR USE FOLLOWING:
-CLR TO CLEAR THE SCREEN
-HOME TO RESET CURSOR-POSITION
-S TO GO BACK TO EDITOR
CODED BY RAMU AND MANIAX

2	the char with the char-colour. This function only works when the MULTI-COLOUR mode is on. You will now edit with MULTI-COLOUR 1.
3	This function also only works when the MULTI-COLOUR mode is on. You're now editing with MULTI-COLOUR 2.
4	After you've pressed this key, you'll be working with the BACKGROUND-COLOUR.
CBM + 1	Press this key if you want to edit SET 1.
CBM + 2	Press this key if you want to edit SET 2.
CBM + 3	Press this key if you want to edit SET 3.
CBM + 4	Press this key if you want to edit SET 4.
SHIFT+ 1	If you press this key, you now will edit with speed 1 (Fast.)
SHIFT+ 2	If you press this key, you now will edit with speed 2 (Normal.)
SHIFT+ 3	If you press this key, you now will edit with speed 3 (Slow.)


-USE CURSOR KEYS TO SELECT A CHAR
-USE JOYSTICK IN PORT TWO TO EDI
-CLR TO CLEAR CHAR
-HOME TO GO TO FIRST CHAR
-CTRL+HOME TO GO TO LAST CHAR
-1 TO EDIT CHAR WITH CHAR COLOUR
-2 TO EDIT CHAR WITH MULTI COLOUR
-3 TO EDIT CHAR WITH MULTI COLOUR
-4 TO EDIT CHAR WITH BACKGROUND
-M TO MIRROR THE CHAR
-R TO ROTATE THE CHAR
-F TO FLIP THE CHAR
-L TO SCROLL CHAR LEFT
-SHIFT+L TO SCROLL CHAR RIGHT
-D TO SCROLL CHAR DOWN
-SHIFT+D TO SCROLL CHAR UP
-SHIFT+R TO REVERSE THE CHAR
-CTRL+R TO REVERSE UPPER/LOWER
-SHIFT+N GETS COMMODORE SET <U
-CTRL+N GETS COMMODORE SET <DO
SPACE = NEXT PAGE F1 = BACK T
THE ULTIMATE FONT EDITOR
NOTE THIS:
CHAR IN MEMORY:
COL. 1
MUL. 1
MUL. 2
BKG.
F1 CHAR COLOUR
F3 MULTI COLOUR 1
F5 MULTI COLOUR 2
F7 BACKGROUND COLOUR
F2 MULTI COLOUR ON/OFF
F4 GET CHAR
F6 PUT CHAR
F8 HELP MENU
SET:

M	Pressing this key will mirror the char selected with the main cursor.
F	This key will flip the char selected with the main cursor.
R	If you press this key, the current char will be rotated 90 degrees.
L	Pressing this key will SCROLL the current char one bit to the left.
SHIFT+ L	Pressing these keys will SCROLL the current char one bit to the right.
D	This key causes the char to scroll one bit down.
SHIFT+ D	These keys will cause the char to scroll one bit up.
SHIFT+ R	The char selected by the main cursor will be REVERSED.
CTRL + R	If the main cursor is in the upper four rows of the set, that half will be REVERSED. If the main cursor is in the other four rows, the lower half will be REVERSED.
SHIFT+ N	This command gives you the original CBM-SET. (The UPPER-SET.)
CTRL + N	This command also gives you the original CBM-set. (But this time the LOWER-SET.)
E	Pressing this key will ERASE the first four rows from the set. (If you didn't SAVE the set yet, these rows will be lost.)
SHIFT+ E	If you press these keys, the last four rows will be ERASED. (Again, if you didn't SAVE the set yet, these rows will be lost.)
CTRL + E	These keys will ERASE the whole set when pressed. (If you didn't SAVE the set yet, this set will be lost.)
DEL	This command will ERASE the char BEFORE the char selected with the main cursor.
CTRL + DEL	Pressing these keys will ERASE all chars behind the char selected with the main cursor.
S	If you press this key, you will EXIT to the DISK-MENU. The DISK-MENU will be reviewed later.
X	When you press this key, you select a char into the X-CHANGE-MEM. (This MEM is used to x-change two chars.)
SHIFT+ X	Press these keys and the selected char will trade places with the char you selected with X.
T	If you press this key, you will EXIT to the SCREEN EDITOR.

You move the cursor around with the joystick in port 2. If you press the button, the char you had selected before you pressed T will be placed on the screen.

There are some other commands which you can use in the SCREEN EDITOR:

SHIFT+ HOME	This command will clear the current screen. (If not SAVED yet, this screen will be lost.)
HOME	This command will position the cursor in the top-left corner of your screen.
B	If you press this key you will return to the main editor. (Either to quit the SCREEN EDITOR or to get the next char to be put on the screen.)

Disk-Menu

The DISK-MENU is used to LOAD/SAVE your creations to disk in order to use it later in your own programs.

You can also save the screen you have edited with your font.

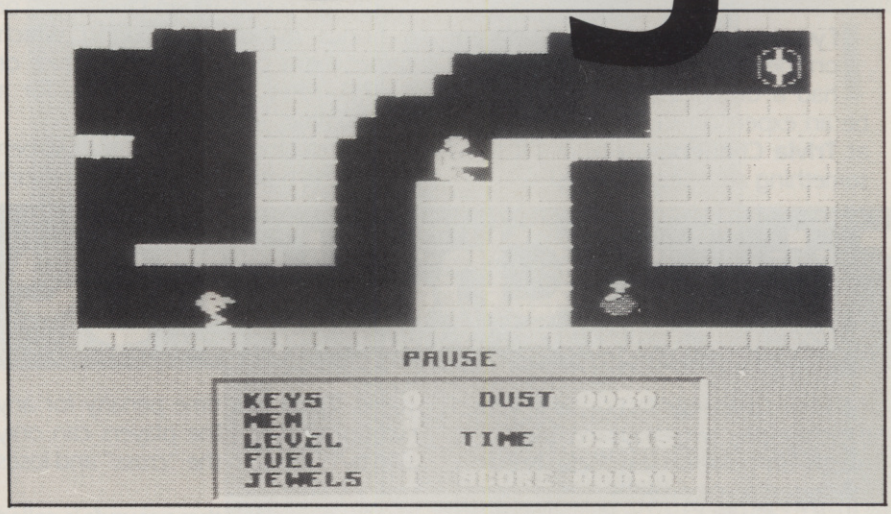
A list of functions follows:

F1	Press this key if you want to LOAD a set into the memory for SET 1.
F2	Press this key if you want to SAVE the memory from SET 1.
F3	Press this key if you want to LOAD a set into the memory for SET 2.
F4	Press this key if you want to SAVE the memory from SET 2.
F5	Press this key if you want to LOAD a set into the memory for SET 3.
F6	Press this key if you want to SAVE the memory from SET 3.
F7	Press this key if you want to LOAD a set into the memory for SET 4.
F8	Press this key if you want to SAVE the memory from SET 4.
CBM+ L	Press these keys if you want to LOAD any screen into the SCREEN EDITOR.
CBM+ S	Press these keys if you want to SAVE the screen created in the SCREEN EDITOR.
D	Press this key if you want to give a DISK-COMMAND. (All commands can be given.)
S	Press this key if you want to know the DISK-STATUS.
C	Press this key if you want to see the DIRECTORY.
B	Press this key if you want to EXIT the DISK-MENU and go back to the main editor.

Margo

Explore the caves and collect the jewels whilst maintaining your fuel levels in this space age game

By Paul Montwill



You are Margo the spaceman (Did he say Man?....Ed). It is your mission to collect all the fuel and jewels in the caves. Once you have done this an exit will appear and you can leave.

In order to complete the game you have to complete all four levels. This seems a pretty easy task. Along your travels you will find a number of keys. These are needed to open up blocked passageways and undiscovered exit routes.

So what's the problem with that? To be honest, if thats all you had to do your life as a wandering spaceman would be very simple indeed. Unfortunately these keys have to be collected in specific order. It is no good you picking up key number five if you have not already picked up numbers one to four.

As in all cases like this, there are still more complications. As you travel around the caves you are going to come across the inevitable aliens. Contact with these creatures is fatal, so be careful. Shooting the aliens increases your score. An added attraction is that when you shoot an alien it leaves a trail of 'dust' as is disintegrates. By flying through this 'dust' you will collect some additional bonus points. These points are then added to your score at the end of each level.

Margo starts the game with three lives. You are out of the game when you lose them, or run out of time.

To collect an object you simply fly over it. A word of caution, there is one alien that should NOT be shot. If you disregard this warning you will find you cannot shoot anything else for at least 20 seconds. There is an extra man for every 10000 points awarded.

After the last of the fuel and jewels have been collected Margo will have to find the exit by flying back through the cave. To go through the exit you simply fly over it.

Game Controls

PAUSE – If you want to pause the game press the RUN/STOP key. To restart press the fire button.

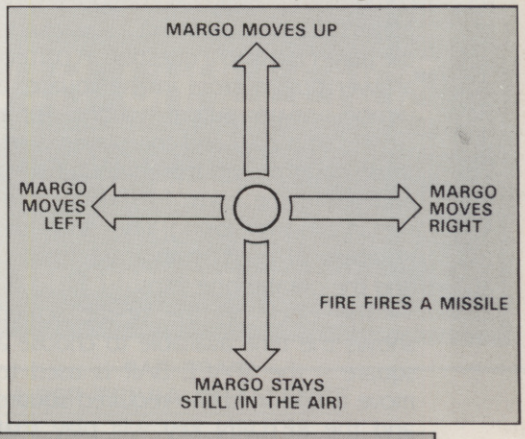
MOVEMENT – The joystick is plugged into Port 2 and movement is as follows:

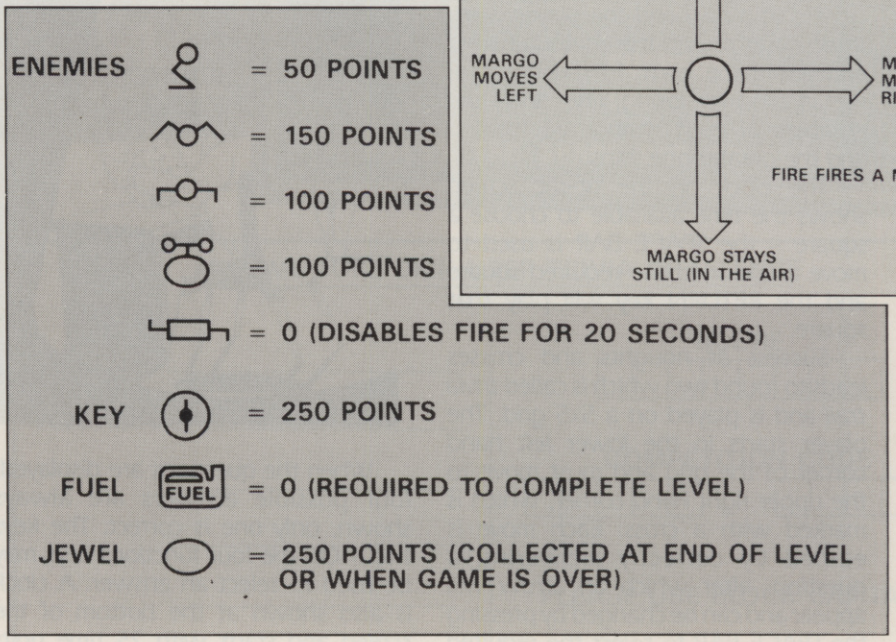
Forward moves Margo up.
BAck makes Margo stay still.
Right moves Margo right.
Left moves him left.
Fire button releases a missile.

In order to get Margo to move down you simply release the joystick and he will float to the ground.

Scores

Enemies:
Key:
Fuel:
Jewel:
Dust: Times 3 if level completed.
Times 1 if game over.
Time: Times 40 if level completed.
Level: Times 1000 for completing level.




ENEMIES = 50 POINTS
= 150 POINTS
= 100 POINTS
= 100 POINTS
= 0 (DISABLES FIRE FOR 20 SECONDS)
KEY = 250 POINTS
FUEL = 0 (REQUIRED TO COMPLETE LEVEL)
JEWEL = 250 POINTS (COLLECTED AT END OF LEVEL OR WHEN GAME IS OVER)

Trivia Challenge - Part 1

Play this ever popular game and maybe you can pick yourself up a prize

By Keith Suddick

If you know how many golf balls are on the moon or which English King had a tattoo then you might well be an expert on trivia – so have a go at **Trivia Challenge,** you might learn something absolutely useless!

Trivia Challenge is a game in which there are over two thousand questions, mostly on quite useless facts. Answering questions correctly earns points which, at the end of a game will be converted into a code, which along with the score may be used to enter the **Commodore Disk User Trivia Challenge** competition.

There are three rounds in the game, which repeat and get more difficult as the game progresses.

The first of the three rounds is called *tic-tac-trivia* – a simple(!) game of noughts and crosses, in which the player lays down crosses against the computer, playing as noughts. The players alternatively select a square and the player is asked a question. A correct answer puts a cross in the square, a wrong answer puts a nought. Three crosses in a row and the player wins, three noughts and the computer wins and the game ends. In the event of no winning (or losing) lines then the numbers of each symbol are totalled and the greater one wins.

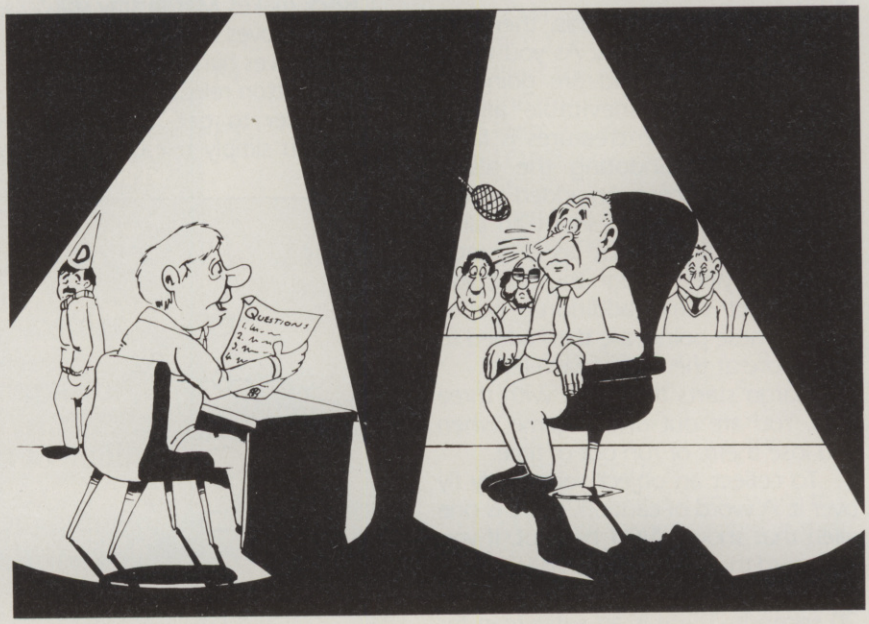
The clock on the tic-tac screen shows the time available to choose a square – the SPACE BAR is used to move a cursor to the required square and the RETURN key will play that square.

Success at noughts and crosses leads to round two which is called *trivia trail* and is played on a 5x5 grid. The player starts in the lower left hand corner of the grid and must move to the upper right hand corner, which is marked with a cross. Each move is earned by correctly answering a question, after which an arrow will appear and can be changed by pressing the SPACE BAR to select the required direction, then the RETURN key to make the move.

At the start of this round, each square on the board contains either a diamond marker, each of which are worth ten points when landed on, or a bonus marker (a nought) which carries extra points, or free moves or a clock reset when landed on for a second time.

The clock on the trivia trail screen shows the time available for the entire game. There is a time penalty for any wrong answers. The players can only win by getting to the "cross" and loses only by time out.

The last of the three rounds is called *trivia flash* and is simply a rapid sequence of questions – 2 for each time through the three rounds. There is no time limit but ALL the questions have to be answered correctly or the game will end. After "trivia flash" the game returns to "tic-tac-trivia" and so on but it will be slightly more difficult each time around.



When the questions are displayed, four possible answers are always shown, only one is correct. The keys 1 to 4 OR the four functions keys may be used to select an answer. A clock is also shown at the bottom of the screen and starts with 25 time units shown, a correct answer will earn 4 points for each time unit remaining when the key is pressed – time out will end the game.

As already mentioned, when the game ends a competition code will be shown along with the final score, BOTH the score and code are required to enter the competition, so if you wish to enter, copy them down carefully – they will only be shown on the screen for a limited time so have a pen and paper ready.

As should become obvious, the disk needs to remain in the drive throughout the game, so it only remains to say Good Luck!

About the Competition

CDU in conjunction with the author, challenge you all to enter to better my score.

Once we have published all 3 parts of Trivia Challenge and you have linked them together to form the game (see Getting It In), you will have a chance to pick up a colour monitor for your C64. At the end of this article you will see a competition score sheet. Simply fill out the details and send your entry to:-

Trivia Challenge,
CDU,
Argus House,
Boundary Way,
Hemel Hempstead,
HP2 7ST.

Closing date for the competition will be **30th June 1990.** (This should give our Australian readers a fair crack of the whip!!!). Only one entry per person will be allowed. Employees of Argus Specialist Publications and their relatives are exempt from the competition.

Getting It In

Trivia Challenge will be presented as 3 files over the next 3 issues, titled Trivia 1, Trivia 2 and Trivia 3. On this month's disk you will find Trivia 1 and a program called Trivia Install. (Do not load and run Trivia Install until you have all 3 Trivia files). Once you have all 3 Trivia files, load and run Trivia Install and have a blank formatted disk ready. Simply follow the onscreen instructions to make a final version of Trivia Challenge.

Note: Due to the way the program is saved out in the final version, you will not be able to load and see the directory. In order to run the final version simply put the disk in the drive and type **LOAD "TRIVIA", 8,1**

COMMODORE DISK USER TRIVIA CHALLENGE

NAME _____

ADDRESS _____

_____

_____

_____

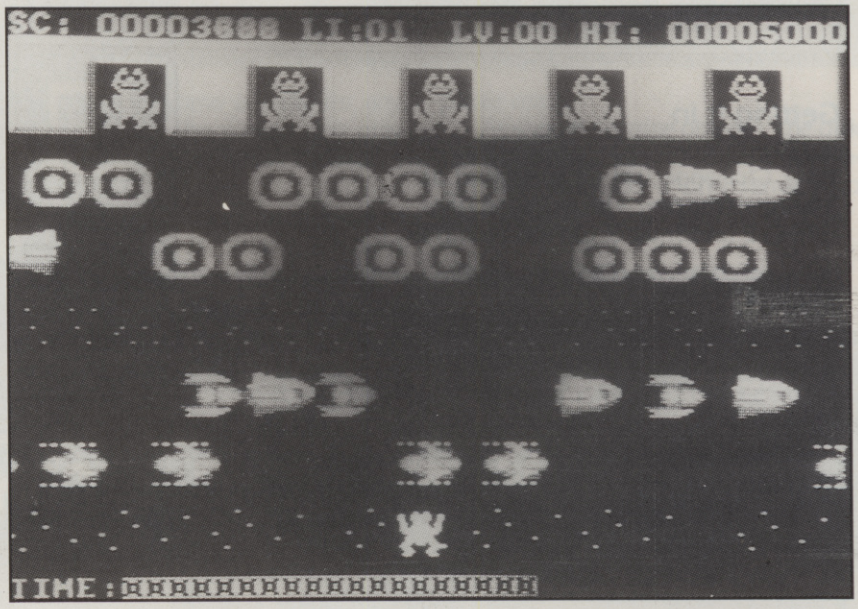
SCORE

COMPETITION CODE

PLEASE USE BLOCK CAPITALS

Based on the ever popular 'Frogger', this is a do or die game of skill and judgement
By G. Mayhew

Frogs in space



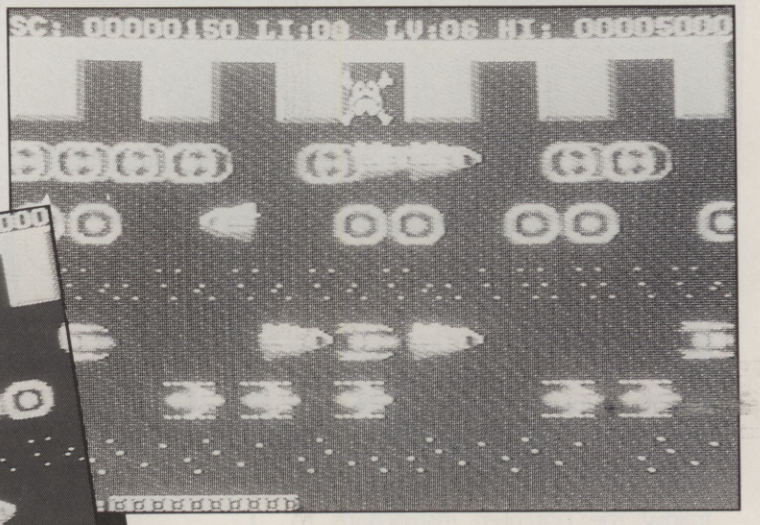
The basic idea of the game is similar to the arcade version of Frogger, that is, you have to guide your poor frog across the busy space lanes. Once you reach the central reservation you can hitch a lift to his pad.

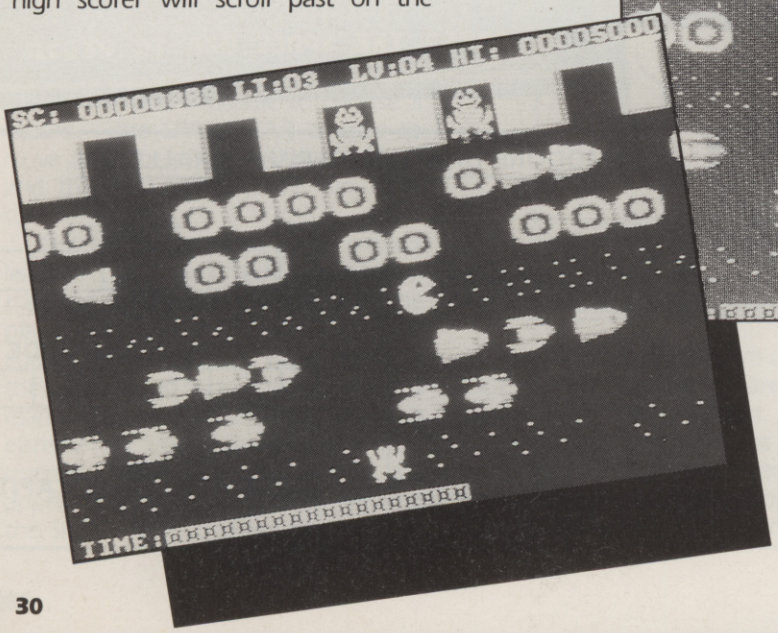
Apart from dodging the space traffic, and timing jumps to hitch lifts to perfection, there are other hazards! These include combinations of four variations of spacecraft formations, a Pac-man in the central reservation (munching across the screen!), and the usual increase in traffic speed and the amount of time allowed to reach home.

Your score will increase by 10 points when you hop forward, it will also increase by 1 point for each unit of time remaining when a frog reaches home. There is also a chance to gain extra frogs by collecting the letters to spell the word BONUS on certain levels.

There are 32 levels to complete. You may start on any of the first 16, level 0 being the first, 31 the last.

The high score and name of the high scorer will scroll past on the introductory screen, after the credits.

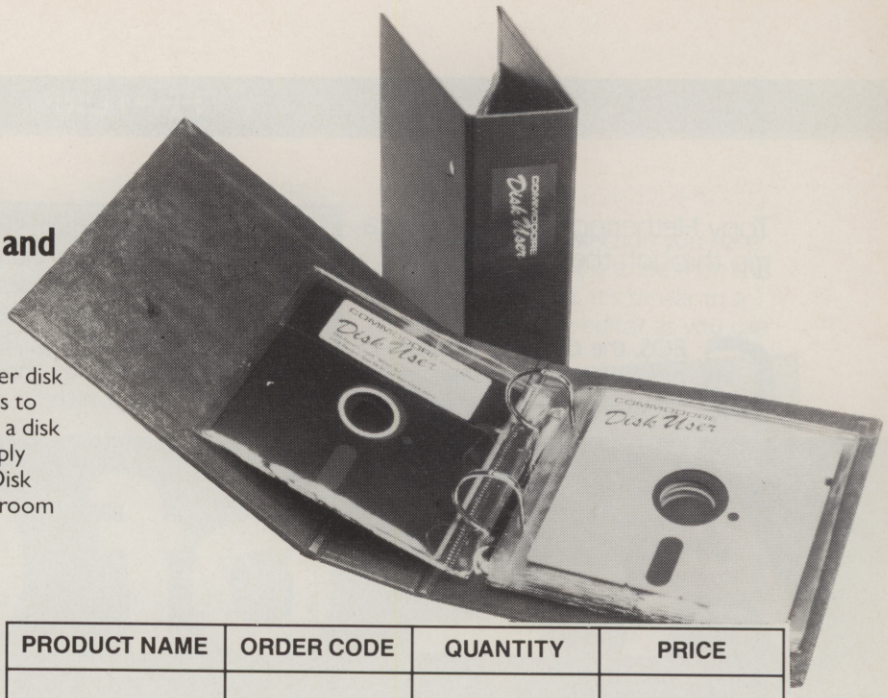




There is a hidden access code to enable you to start on ANY level. If you manage to complete all 32 levels, there is the customary congratulations screen to greet you. Good luck, you will need it!!

Binders

Organise and protect your disk with Commodore Disk User disk binders and data disks.



Why not keep your Commodore Disk User program collection alongside your magazines in a stylish Disk User disk binder? The binder comes complete with 10 disk sleeves to organise and protect your program disks. Why not buy a disk binder to house all of your data disks? We can even supply Commodore Disk User data disks. The Commodore Disk User logo immediately identifies your disks and there's room to title them and document the disks details.
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20 sleeves for inclusion in binder, £2.75. Order code **BDS20**

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		TOTAL	

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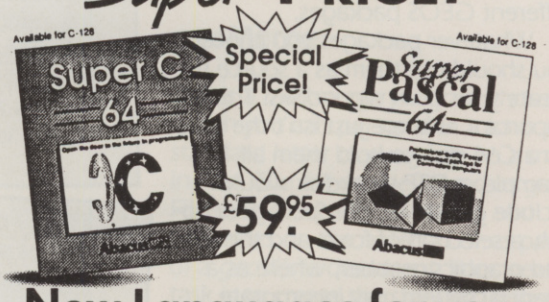

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A-Z of Geos

Tony Hetherington take us on a trip through the GEOS jungle

GEOS, the *Graphics Environment Operating System* began life as a gimmick to mimic the icons, windows and pull down menus of 16 bit machines, particularly the Apple Macintosh. Now it has evolved into an entire suite that offers its users a comprehensive collection of programs and utilities which is the most extensive in C64 computing. There have been reviews and roundups of GEOS programs before but here is the definitive A-Z of GEOS including all the programs, utilities and accessories followed by a summary of the packages that contain them. This will allow you to pick and choose the components you want and need. For example, *geoMerge* is available in four different GEOS packages.

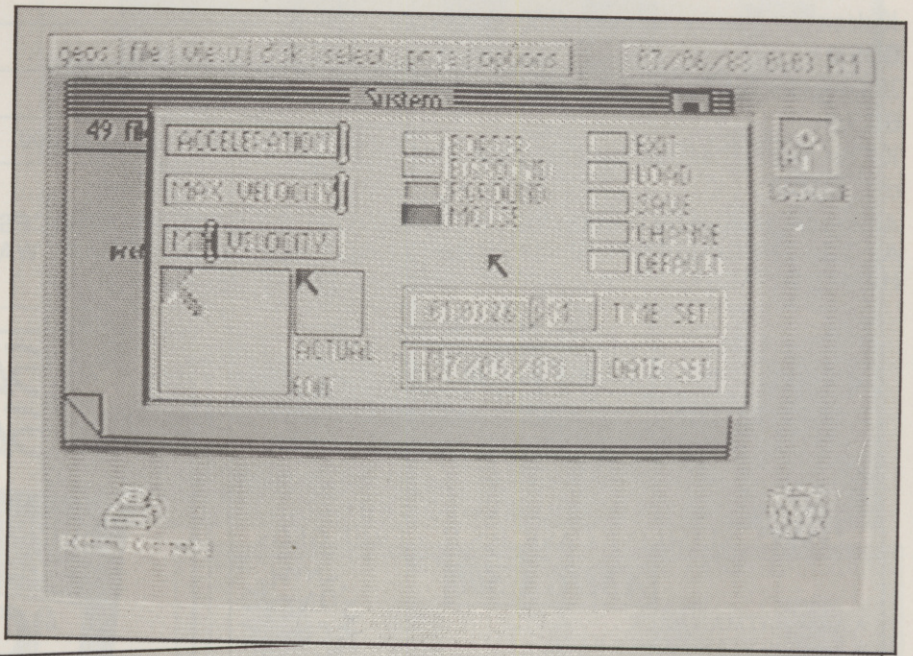
Whatever packages you choose you should use them as a source to create your own work disks. This is important as there just isn't the space on a C64 disk to hold them all. For example, a DTP workdisk would include *geoWrite, geoSpell, geoPublish*, a selection of fonts and the text and graphics grabber, where as a financial system may incorporate *geoWrite* for reports, *geoCalc* and *geoChart*.

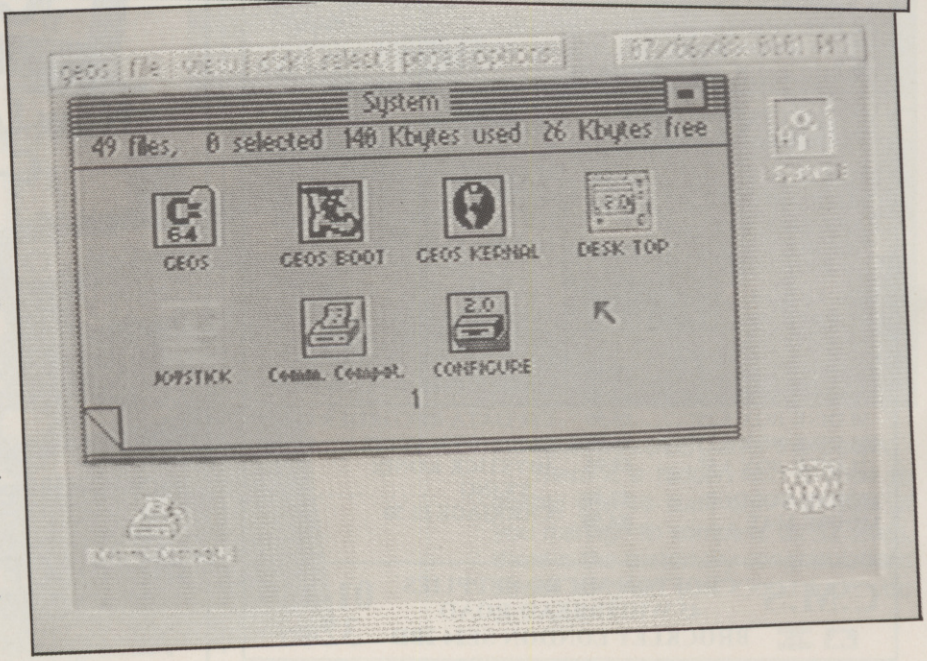
Desk Top

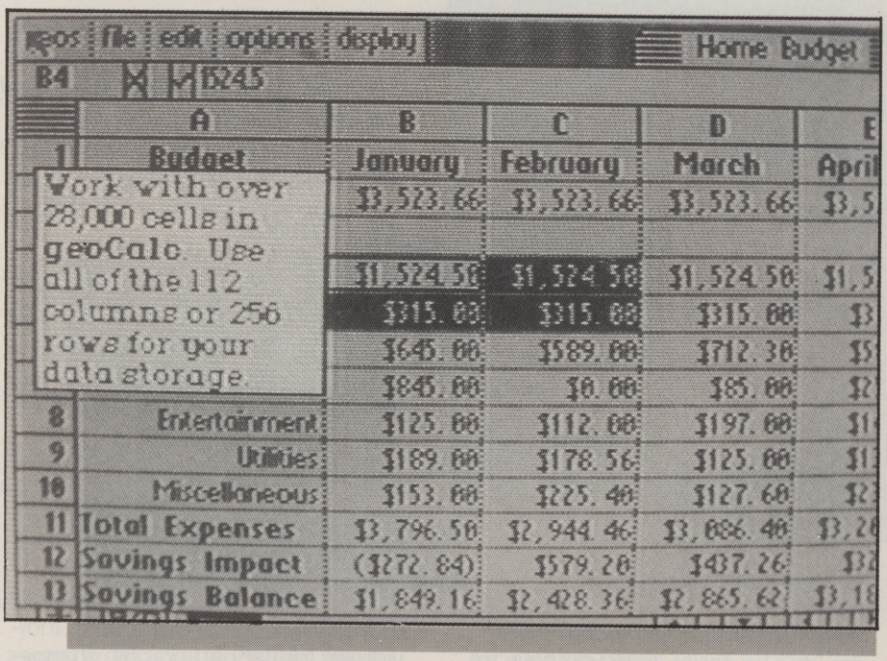
This is the font end of the GEOS system that uses Mac like displays on the C64 and includes pull down menus, recently updated with time saving keyboard shortcuts, icons to select and load programs and now a disk turbo to speed up the process. To copy programs and files to your workdisk in GEOS you simply move a joystick controlled cursor to the program icon and then drag it to the border and *deskTop* will do the rest. Similarly, to delete a file or program simply drag it to the wastebin icon. Another important element of the *deskTop* which is used throughout GEOS programs is the dialogue box. This appears over the display and poses questions such as which file to open or asks you to set parameters. This you do by clicking the right yes, no, cancel or OK box.

geoCalc

geoCalc adds a spreadsheet and the power of number crunching to the







GEOS suite of programs. It offers a total of 28,000 cells arranged in 256 rows and 112 columns where each cell can contain text (i.e. a heading), a number or a formula. By filling in part of the spreadsheet (you'll rarely use it all) you can manage your household accounts, calculate the state of your business or analyse the effect of the latest change in the interest rates on the amount of money you have left to book a holiday! The real power of a spreadsheet is that you can quickly change any value in the calculation and recalculate the entire worksheet with the press of a single button. With GEOS this is even easier as you can look at two different areas of a spreadsheet at once through a split screen display and paste what you need, where you need it with the click of a button. Once you've created your figures using *geoCalc* you can either print them out, load them into a *geoWrite* document or use them as data for *geoChart*.

geoChart

Business graphics have never been so popular largely due to the "why can't my computer produce reports like that" TV adds. Thanks to *geoChart* the C64 can. You can either type in values or load them in from *geoCalc, geoFile, geoWrite* or the notepad accessory and display them in nine different forms. These include bar, point and line chart as well as scatter point charts and scatter line charts. You can define 32 different fill patterns and label axis in 14 different ways, so you can be sure of getting the layout and chart you want. Once the chart is complete it can be printed or incorporated in a *geoWrite* document or on a *geoPublish* page.

geoDex

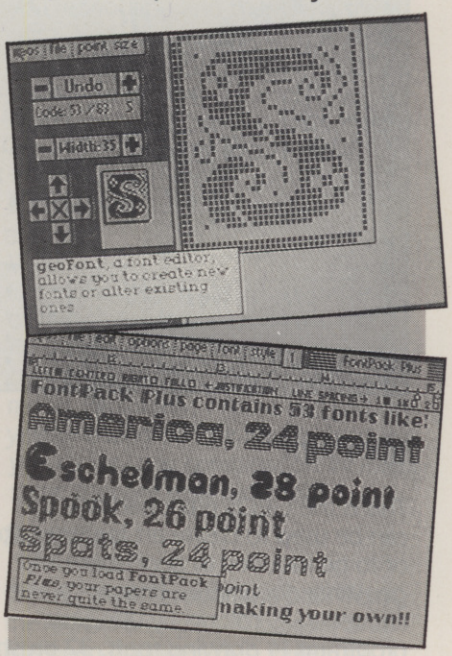
This is one of the oldest GEOS programs and in some respects has been superseded by *geoFile*. It offers an electronic card index file system in which you can store names, addresses, phone numbers and notes such as birthdays and other details.

geoFile

If you're looking for a more comprehensive filing system then you should opt for *geoFile*. This is a database, GEOS style, in which you can decide exactly how your file will look by defining fields, for example a name, and then positioning them by dragging them to the desired position. if you're not happy with the layout you can resize boxes and move them freely. Once a form is complete data can be filled when requested and recalled at will. You can also define printed reports using the stored data for display on screen or printer.

geoFont

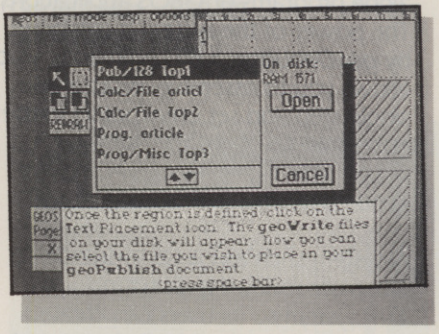
The GEOS programs add to their appeal by the use of different fonts or text styles. If the selection you have isn't all you'd want it to be then this program is for you. It's similar to a character or sprite editor as you can

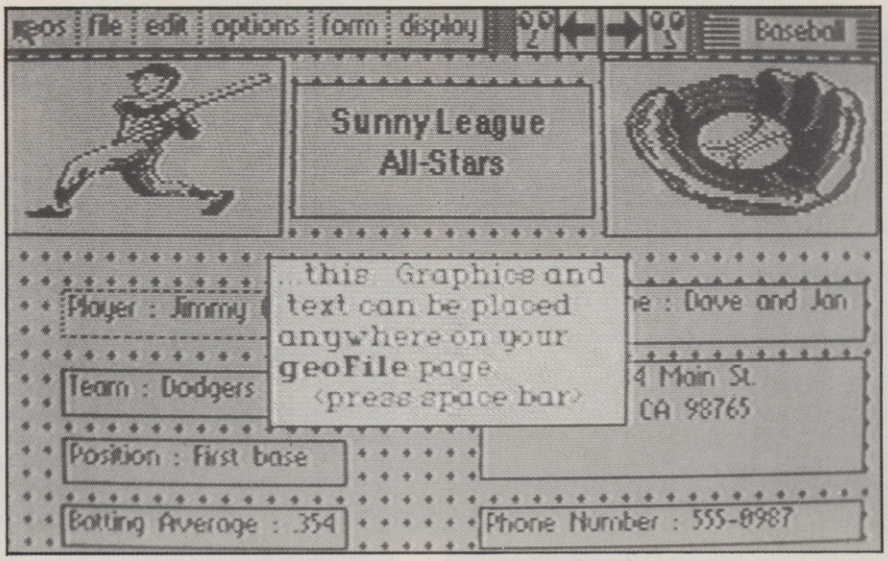

geos file point size
Undo
Width:35
geoFont, a font editor, allows you to create new fonts or alter existing ones
FontPack Plus
FontPack Plus contains 53 fonts like:
America, 24 point
Eschelman, 28 point
Spook, 26 point
Spats, 24 point
Once you load FontPack Plus, your papers are never quite the same
making your own!!

create the letters and symbols that form a font from scratch or edit or change and existing one. When its complete you can name your new creation and save it onto disk.

geoMerge

This is a mail merge program through which you can personalise a form or standard letter to everyone on a mailing list. The list can be stored as geoFile data or as a list of names and addresses on the notepad or as part of a *geoWrite* document. Your next task is to create the standard letter leaving gaps where you want the name or address to appear and *geoMerge* will fill in those gaps and create a separate personalised letter for everyone on the list.


Pub/128 Top1
Calc/File artic1
Calc/File Top2
Prog. article
Prog/Misc Top3
On disk:
RAM 1571
Open
Cancel
Once the region is defined click on the Text Placement icon. The geoWrite files on your disk will appear. Now you can select the file you wish to place in your geoPublish document
<press space bar>



geoPaint

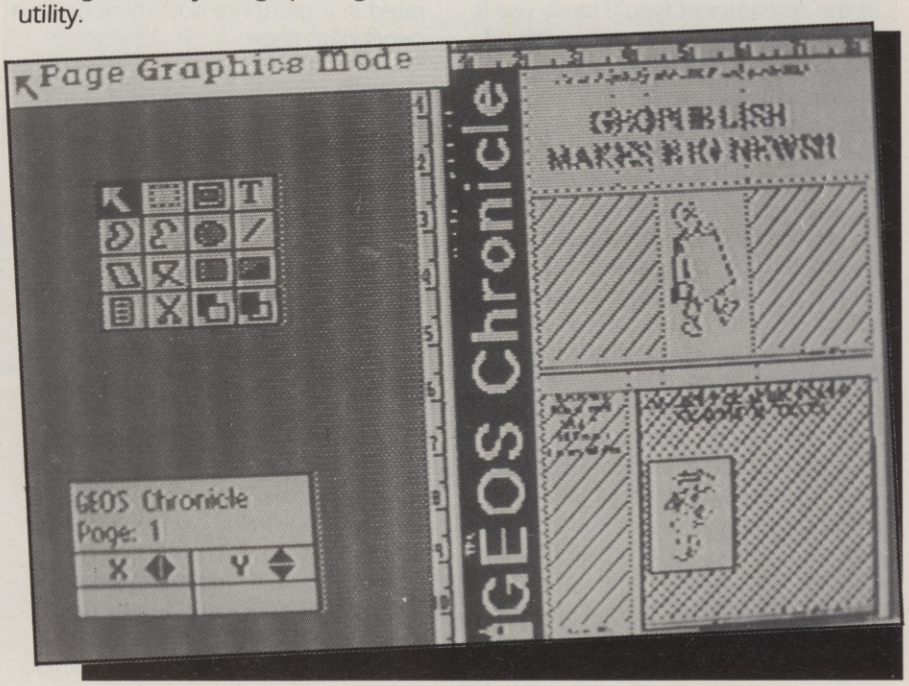
This is the GEOS paint package that can be used to create art for art's sake or to be included in *geoPublish* and *geoWrite* documents. Images can be created in 16 colours by using the progtrams 14 drawing tools, 32 brush shapes and 32 painting patterns. You can also invert, rotate, move and mirror images, integrate text with graphics and stretch and scale images to fit.

geoProgrammer

GeoProgrammer is a scaled down version of Berkley Softwork's own *Unix* development system and can be used to create GEOS applications. It is supported by a massive 400 page manual that describes in great detail the three parts of the system which are *geoAssembler, geoLinker* and *geoDebugger, geoAssembler* takes 6502 instructions and creates object files that can be linked by *geoLinker* to form stand alone programs or GEOS applications. The power of the system is exhibited by *geoDebugger's* 80 commands that allows you to assemble, disassemble, single step and set breakpoints in the code.

geoPublish

A system such as GEOS wouldn't be complete today if it didn't include a DTP system so its users can create their own newsletters, flysheets and magazines. As a bonus it is also one of the best 8 bit DTP programs you can get and even rivals some of the business packages costing three times the price. Creating a *geoPublish* page couldn't be easier as all you have to do is fill the page with boxes of any shape and size and fill them with text loaded in from *geoWrite* and graphics from *geoPaint*, or those that have been grabbed by the graphics grabber utility.



geoSpell

geoSpell adds a 28,000 word dictionary to your word processing needs which may sound a little low in today's terms but a generious allocation of space for user dictionaries means that you can quickly build up a more comprehensive list to suit your own specific applications. When you check a word, a list of alternatives is displayed and if the word you actually wanted isn't listed you can simply click on the appropriate letter key and scroll through the entire list.

geoWrite 2.1

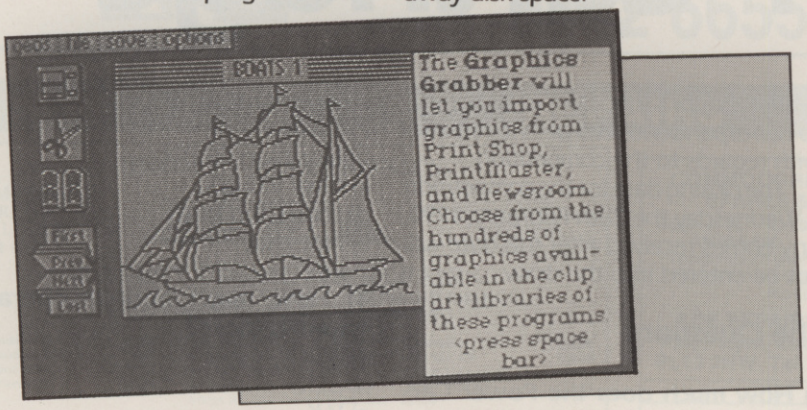
geoWrite is a fully functioned word processor but is also the work horse of the GEOS system. It is used to create copy for *geoPublish*, mailing lists for *geoMerge*, an assembler pad for *geoProgrammer* and an output medium for *geoCalc, geoChart, geoPaint* and *geoFile*. Perhaps, it is just as well that it has developed considerably from its days as a simple text editor and now boasts an impressive range of features including the ability to freely mix text and graphics, individually format paragraphs, change fonts and point sizes at will, create multiple columns and add headlines, borders, headers and footers.

Utilities

The GEOS programs are only half the GEOS story as the following utilities extend the range and usefulness of these programs considerably by adding the ability to use existing files from other programs and incorporate them into your GEOS system.

Graphics Grabber

With the graphics grabber installed on a disk you can load in and grab any graphic from programs like *Newsroom, Print Shop* and *Print Master* and include them in GEOS programs such as *geoWrite* and *geoPublish*. Simply, insert the relevant disk, choose the graphic you want and the grabber does the rest and stores it in a photo scrap ready for use.


BOATS 1
The Graphics Grabber will let you import graphics from Print Shop, PrintMaster, and Newsroom. Choose from the hundreds of graphics available in the clip art libraries of these programs.
<press space bar>

Icon Editor

The *Icon Editor* is an utility with hidden potential, as on the surface it allows you to customise and design your own GEOS icons. However, it also means that you can convert your existing programs so that they can be loaded and started by clicking the appropriate icon (Clicking the icon is the same as typing the LOAD "*",8,1 command).

Text Grabber

The *Text Grabber* can grab and convert any C64 word processor file and then load it in ready for use in *geoWrite* or *geoPublish*. This effectively makes *geoWrite* the universal C64 word processor as you can confidently upgrade to GEOS and be sure that you can still use your old WP files. An ideal application for this is if you're editing a club newsletter as the *Text Grabber* means that your writers can create their articles on their favourite word processor and you can convert them all ready to create *geoPublish* pages.

Fontpack Plus

Without doubt it is the variety of fonts that make GEOS programs stand out. So if you need more than the 10 supplied with *geoWrite* to liven up your documents then here are 52 more. Choose the ones you like and copy them onto your work disk. Don't get too carried away as they rapidly eat away disk space.

ACCESSORIES

The GEOS picture is completed by the desk accessories that provide useful functions, allow you to customise your system and provide some light relief.

Alarm Clock

Have you an important meeting, a deadline to meet or a train to catch? Simply, set the alarm clock and GEOS will remind you.

Blackjack

This is a true Macintosh tradition so I suppose it's inevitable that its included in GEOS. Play against the computer but remember the odds always favour the house.

Calendar

An on screen calendar has obvious applications. This one is even more useful as by clicking on a date on the monthly display reveals a diary page to write in your appointments.

Calculator

Do you need to check a calculation or add up a list of figures? This accessory means you can do just that without leaving the keyboard. Type in the numbers from the keyboard or click on the buttons with a joystick or mouse.

Notepad

This is an electronic notebook on which you can make notes while you're working and then print them out when you're ready. This is ideal for listing jobs to do or tasks to complete before a set deadline. The notepad can also be used to create a mailing list to be used by *geoMerge*.

Preference Manager

When GEOS loads in it uses a Mac like mono display, apart from the colour coded icons. However, the *Preference Manager* allows you to customise this to suit your needs and mood. Personally, I find a red text on yellow background easier to read but you can try any combination including some that are truly hideous.

Supplier

GEOS has suffered in the past from the lack of a single UK supplier and has been imported by a variety of companies including Microprose. Now it is in the capable and safe hands of F.S.S.L., who supplies the following packs.

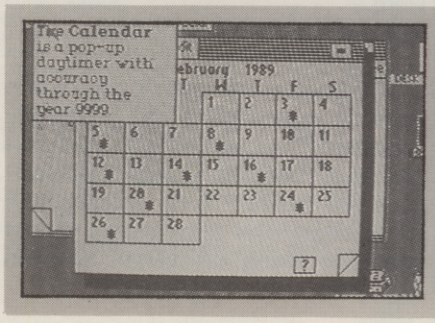
GEOS 2.0 - £39.95
Includes *geoWrite 2.1, deskTop, geoMerge, geoSpell, geoPaint, Text Grabber* utility and *Calculator, notepad, alarm clock* and *preference manager* accessories.

FontPack Plus - £19.95
Includes 52 fonts and *geoFont*.

GeoFile - £29.95.
Includes *geoFile* and *geoMerge*.

GeoCalc - £29.95
GeoProgrammer - £39.95
GeoPublish - £39.95
GeoChart - £17.95.

F.S.S.L. - 0386 553153



Grab yourself a Power Cartridge

Join the movement. Bring Power to the people, and at the same time make life a little easier for yourself

Being the ultimate magazine that provides a full service for its loyal readers (by that I mean the fact that you get a disk full of programs each month), we have decided it was time you shared some more of the spoils. 25 lucky readers can find themselves the proud owners of a **POWER CARTRIDGE.** All we ask you to do is answer 5 simple questions about the product. (Even the Ed could answer 3 of them, so it can't be all that difficult!!)

If by some strange quirk of fate you already own a Power Cartridge, then do not despair. Those lovely people at **BDL** have promised they will refund your purchase price. Providing of course you can still produce the receipt as proof of purchase.

The Rules

Study the questions very carefully. When you have decided upon your answers, simply jot them down on a postcard and send them with your name and address to:

CDU Power Comp
Argus House
Boundary Way
Hemel Hempstead
Herts
HP2 7ST

Obviously, we must have certain rules to make this a fair challenge. Therefore, Employees of BDL and Argus Specialist Publications, and their relatives are exempt from entering the competition. This also applies to any agents working on behalf of both companies.

The Editor's decision is final, and no correspondence will be entered into with regards to the competition.

The closing date for the competition is Wednesday the 28th February, 1990. Any entries received after this date will not be entered into the draw.

The Questions

1) How much does the Power Cartridge cost?
a) £25.99
b) £12.99
c) £34.95
d) £14.99
e) £29.99

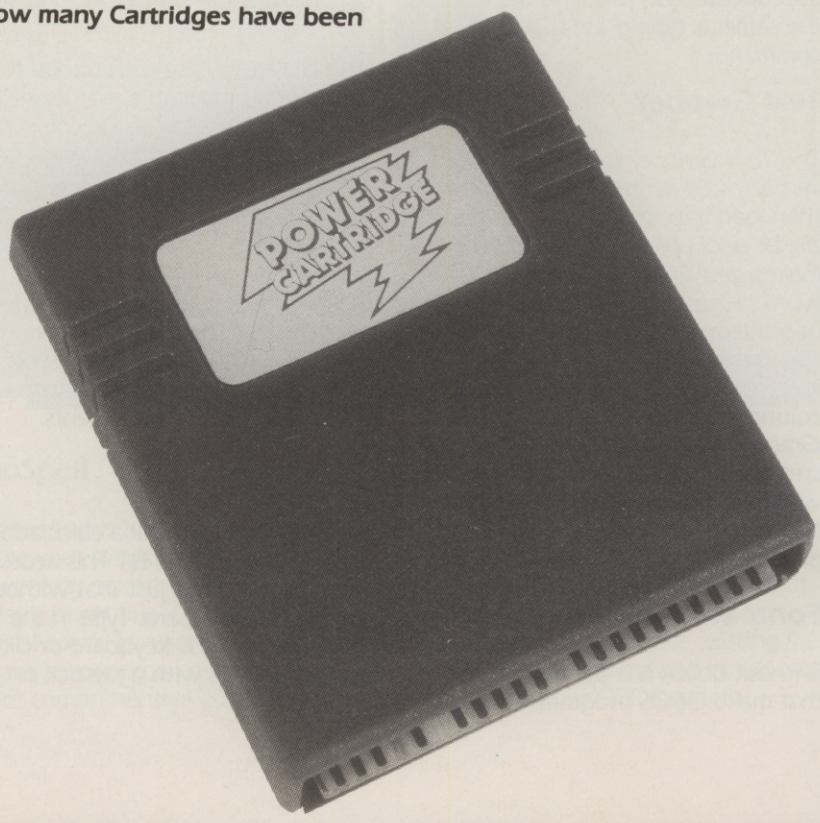
2) What does the command CONTINUE do?
a) Allows you to return to your program
b) Continues the listing of a Basic program
c) Continues backing-up a program
d) Re-enables the screen scroll
e) Continues the hardcopy printout

3) How many Cartridges have been sold in Europe?
a) 50,000
b) Less than 50,000
c) Over 100,000
d) Loads and loads
e) Not a lot

4) How much outside operating system is there?
a) 65K
b) 32K
c) 16K
d) 8K
e) 4K

5) What does the command PSET 3 do?
a) Stops printer output
b) Selects Epson mode
c) Selects Smith-Corona mode
d) Turns on bit-image mode
e) Turns the printing 90 degrees

Answers on a postcard only please. Don't forget, 28th February is the closing date of the competition.



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Power to the People

Yet another cartridge hits the streets. How does it perform against all the others? Our resident expert, S.Wickham, endeavours to find out

OPEN15, 8, 15: PRINT # 15, "SO: Filename":CLOSE15: LOAD"$,8:LIST.Does this kind of line look familiar to you? How about; OPEN1,4: LOAD "Filename",8: PRINT#1: CMD1: LIST: PRINT#1: CLOSE1. Or even POKE53280,4: POKE53281,6: POKE646,1. If all of those statements bring back nightmares, then you are used to programming in a Basic V2 environment.

Taking it one step further does the following also look somewhat familiar? LOAD"Editor",8,1: SYS the start. Edit program then save it out. LOAD"Assembler",8: RUN it, assemble the code then save it out. LOAD "object code loader",8,1: SYS the start then save out your finished code. (Or at the very least – LOAD"monitor",8,1 then activate). Once again, if this looks somewhat familiar then you are used to coding in a fairly primitive way. What is needed in both of the above examples is something that will make the job a lot easier and a lot less time consuming. Enter POWER CARTRIDGE.

In a long line of programming aids that have hit the home computer market, by far the best and most versatile are the family of cartridges. These small, unobtrusive little bits of plastic have transformed the art of programming to points unheard of a mere 6 years ago. No longer is programming the chore that it has always been. No longer do you need a whole arsenal of programming aids to get the best results, with the minimum of effort. Simply plug in your little Black box, (or Red, or Blue or whatever colour takes your fancy), and you are ready to go. In the early days, Cartridges had one minor drawback. Most of them where not transparent to the system. That is to say, you plugged the cartridge in, and it sat there quite happily at $8000 (decimal 32768). If you had a decent monitor program, you could quite easily save out the area of memory from $8000 onwards and have the program on disk. (Try it on the ROBCOM range to see what I mean). This system was ok of course, except that you actually lost the area of memory that the cartridge sat at. These days of course, becuase they are mostly transparent, no memory is lot whatsoever. So it is with POWER CARTRIDGE.

This cartridge is the inspiration of KCS of Holland, and it is distributed in the UK by **Bitcon Devices Ltd**, Tyne and Wear. So! just what has this new product got to offer it's users?

There are mainly 5 areas of programming aids catered for. First and foremost there is the POWER TOOLKIT. This is a powerful Basic-Toolkit that greatly simplifies programming and debugging. DISK TOOL and TAPE TOOL are two modules that speed up the loading and saving of programs. The commands that are available with these two modules can be incorporated in your own programs. POWERMON is an extensive machine code monitor with around 20 commands at your fingertips. It also works in Basic-ROM, Kernal and I/O areas, as well as leaving all of the computers memory available to you. Finally there is PRINTERTOOL. In effect this is a very good printer-interface. There are many printers catered for and makes conversing with different printers a pleasure instead of the usual chore. The cartridge has 1 other function, which I do not see as a toolkit function, the POWER RESET. This function will be explained in more detail later.

POWER TOOLKIT

The toolkit has got the usual batch of extra commands you would expect. Things like AUTO, DEEK, DOEK, DUMP, FIND and RENUMBER. There are two in particular that I found very useful. The first being PAUSE. Delays in a program do not now need to be cumbersome to program. You simply state PAUSE x (Where 'x' equals the number of seconds you want to pause for). The second being SAFE. By using this statement you can disable or enable the RUN/STOP and RESTORE keys. The RENUMBER command allows for whole program renumber, selective renumber and part program displacement. PSET allows the user to define and set up their printer type. (More on this command in the PRINTERTOOL section).

There are altogether some 27 commands that make Basic programming a pleasure to attempt. (For anyone like myself that tends to program large Basic projects, this is a god send!).

DISK/TAPE TOOL

Although the disk and tape tool commands are fairly well standard. They are, nevertheless, helpful. Disk users will find that loading speeds of up to 6 times quicker is not to be sneezed at. Also, the fact that you may now use the standard Basic V7.0 disk commands will prove invaluable. A very nice extra that KCS have thought about is the 'non standard commodore compatible drives'. These drives have been catered for by the implementation of 2 new drive numbers. They are 48 for device 8 and 49 for device number 9. The tape operations are similar but with the addition of being able to SAVE up to 10 times quicker than normal.

POWERMON

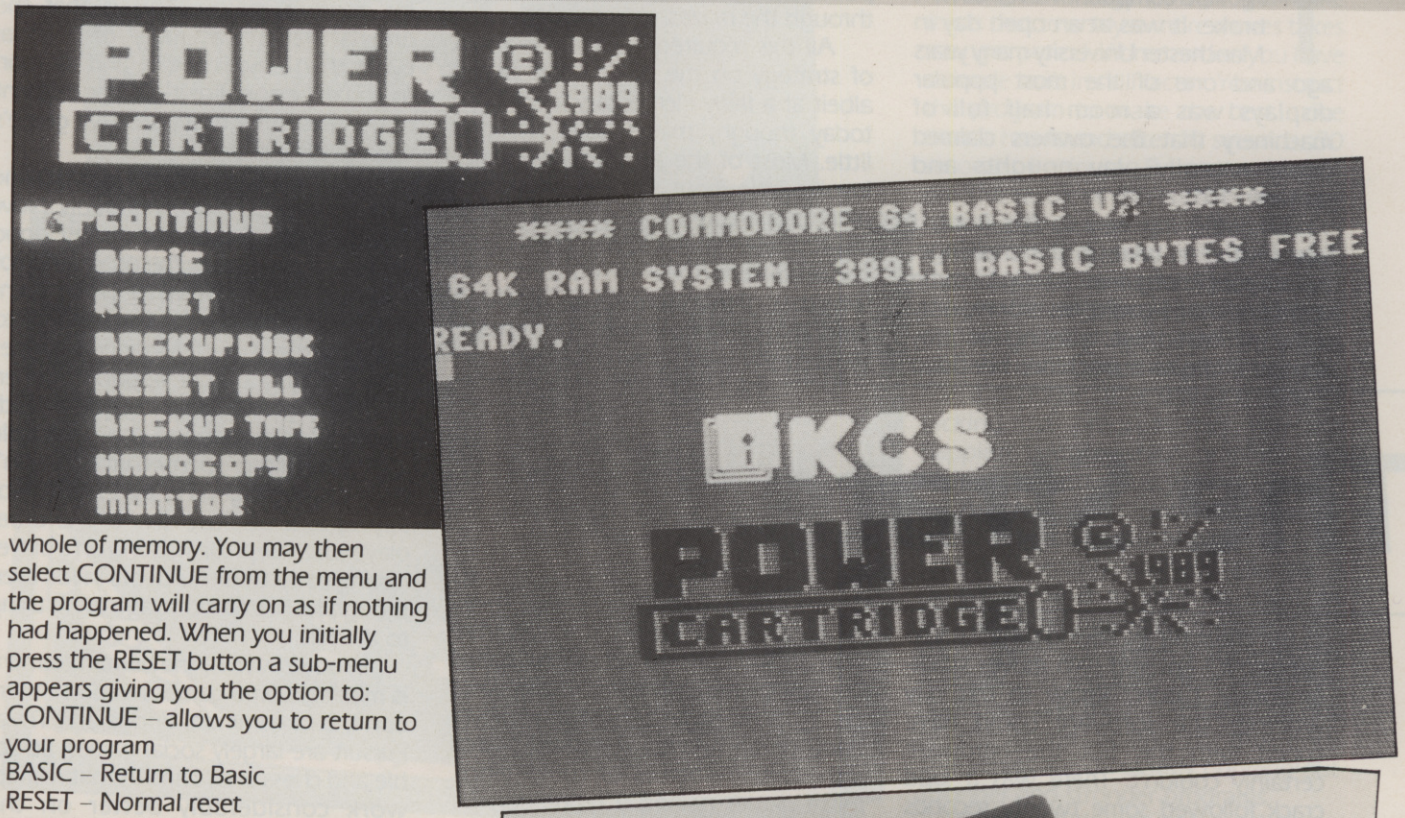
The powermonitor is once again very useful, but fairly standard by comparison to other Cartridges/Monitors. There are 17 functions in all ranging from Assemble, Disassemble and Compare through to Register display and Walk. (It's always struck me as odd that my Dolphin DOS monitor does not have a Disassemble command!!).

PRINTERTOOL

This is perhaps one of the more outstanding attributes that this cartridge has. For starters, it detects whether you have a printer connected to the serial bus or the user port. All Commodore characters can be printed on Epson and compatible printers and the interface allows for many set-up possibilities. You can have hardcopies of HIRES and LORES screns, not only on the usual serial printers but also centronics like EPSON, STAR, PANASONIC etc. The HARDCOPY command self detects whether it is a HIRES or LORES screen. There are also a number of sub-functions from the PSET command which allows for quite a number of different effects to be set up.

At a Glance
Title: Power Cartridge
Supplier: Bitcon Devices Ltd, 88 Bewick Road, Gateshead, Tyne and Wear, NE8 1RS
Telephone: 091-490-1975
Price: £14.99

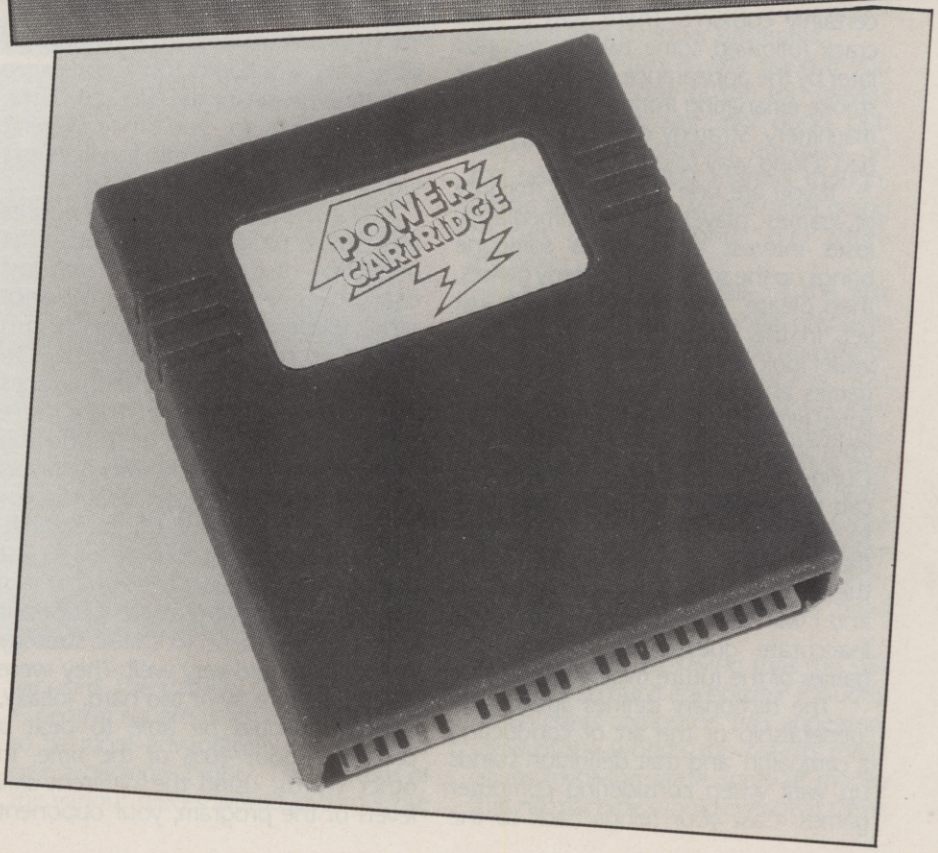
Finally we come to the POWER RESET. As I stated earlier, I do not consider this as a toolkit function or programming aid. In my own opinion this is really a 'hackers' tool. The primary function of the RESET is to freeze a program and then save out the whole of memory. You may then select CONTINUE from the menu and the program will carry on as if nothing had happened. When you initially press the RESET button a sub-menu appears giving you the option to:



CONTINUE – allows you to return to your program
BASIC – Return to Basic
RESET – Normal reset
TOTAL BACKUP DISK – Saves the whole of memory onto disk. The program may be reloaded later with BLOAD followed by CONTINUE
TOTAL BACKUP TAPE – As for the above but to TAPE
RESET ALL – RESET of any program
HARDCOPY – Prints out a hardcopy of the screen. You can return to the program by use of CONTINUE
MONITOR – Takes you into the POWER MONITOR

FINAL ANALYSIS

Compared to some of the cartridges on the market, this may at first glance appear to be somewhat primitive. Unlike some of the products around you cannot Disable Sprites, Pinch character sets, Compress programs, Make coffee and knit a jumper. However, what it does do is make the life of the serious programmer, notice I said programmer and not hacker, somewhat easier. For it's price I would have to say that the POWER CARTRIDGE is money well spent.



The Strategist

The development of strategy within computer games

By Gordon Hamlett

The first computer I ever saw, I broke. It was at an open day in Manchester University many years ago and one of the most popular displays was a room half full of machinery that the owners claimed could actually play noughts and crosses.

Elbowing my way to the front, I was invited to take up the challenge. After a couple of games, it soon became apparent that I could never win, only draw at best. Not wanting to play second fiddle to a machine, I decided to try 'cheating' by seeing what would happen if I entered two moves simultaneously. I don't know to this day whether the software could have coped with this but the hardware certainly couldn't. There was a loud crack followed some twenty seconds later by the appearance of a thick black smoke emanating from the back of the machinery. Strategy games, I decided, had a long way to go.

If you are one of the vast majority of games players who immediately loses interest as soon as someone brings up the subject of strategy games, then please, don't turn the page just yet. In this article, I want to take a wider look at the role of strategy within games and show that it is present to some extent in every game ever written from Space Invaders through Chess to Dungeons and Dragons. If that point can be proved, it then becomes easy to see why some games work better than others on the computer. Finally, the old crystal ball will be dusted down and I will make some no doubt wildly inaccurate guesses as to how the games of the future might develop.

The dictionary defines strategy as 'generalship or the art of conducting a campaign' and that definition stands up well when considering computer games. Cast your minds back to the very earliest games of Space Invaders. after a few trial runs, most people got the hang of hiding underneath the barriers and sneaking out for a few quick shots before dodging back to a relative safety. In Pacman, books were published showing different routes through the mazes.

All this required a certain element of strategy on the part of the player albeit at a fairly elementary level. Even today though, things have changed little. Most of the arcade type games involve little more than learning how best to overcome different patterns of enemy attackers. Only the backgrounds change. It matters not whether the game is a platform derivative or shoot-em-up, the principle remains the same.

At the other end of the spectrum from arcade type games, the so called strategy games appeared. These were the type of game where the player made a move and the computer replied with various degrees of competence. These games gained a reputation for being for 'eggheads' only and were therefore no fun for the average player. I've got news for you. They weren't that much fun for the intelligentsia either.

Take the example of the noughts and crosses program mentioned at the beginning of the article. It soon lost its appeal because there was no chance of the player winning and winning is something that we all like to do. On the other hand, interest soon wanes if the game is too easy. There were many early attempts at producing games like Othello and Backgammon but the algorithms used in the programs just were not up to scratch. Winning all the time soon becomes just as boring as perpetually losing.

This then is one of the important reasons why these so called strategy games never did very well. They were all either too easy or too hard. Ideally, a player should be able to beat a program about 40% of the time. In other words, using the different skill levels of the program, your opponent should always be just a little bit better than you are.

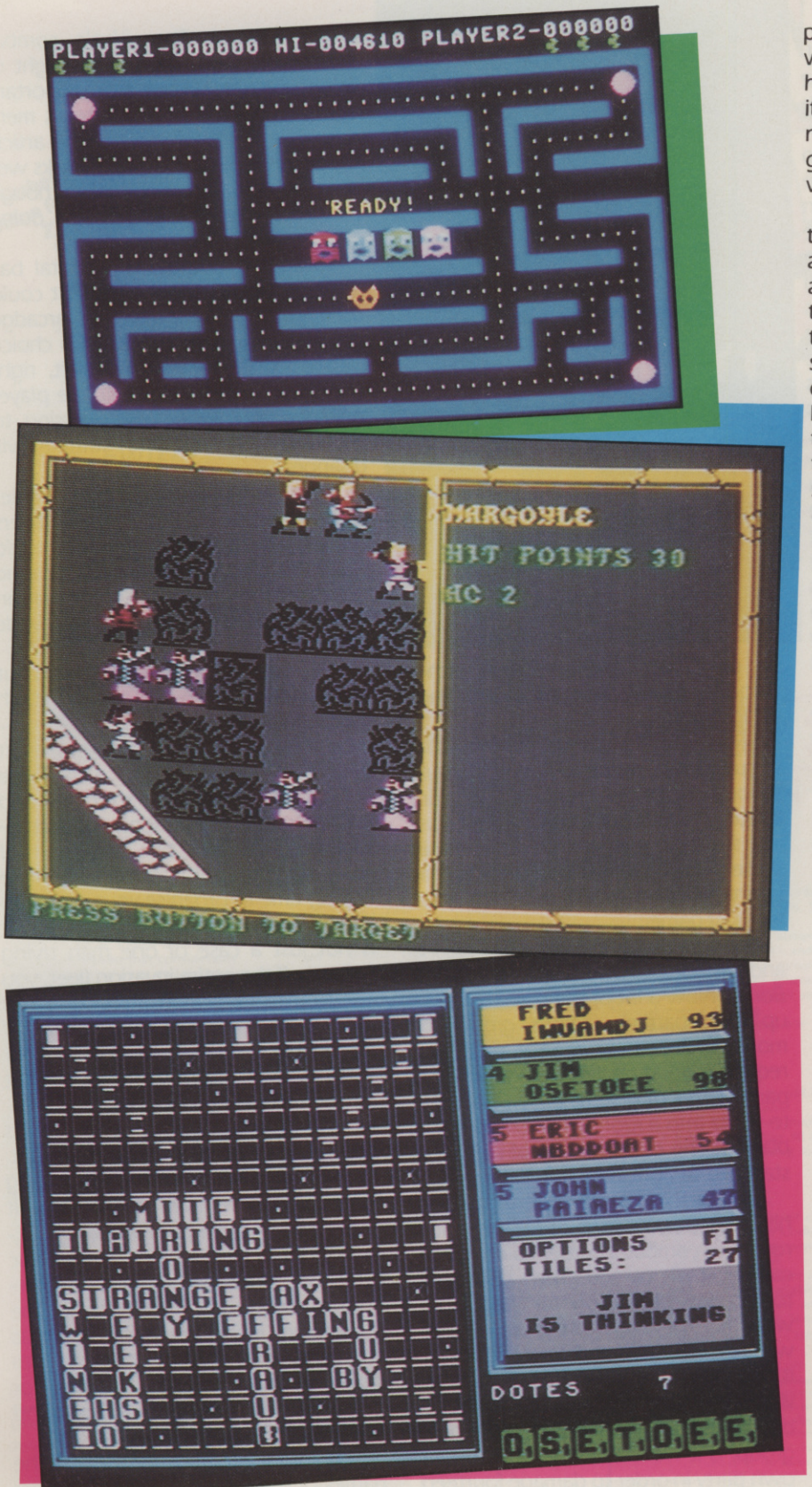
There is another problem with this type of game and one that is not always considered by the software producer. Although many games can be competently programmed, they don't work for another reason. This is that the original game was more of a social event than anything else and as soon as you depersonalise it, a large element of the reason for that particular game's success disappears.

This is especially true of board game conversions. Consider Monopoly. Now *Leisure Genius* put out a very good version of the game. The program kept a perfect record of what piece went where and who had what money etc. But half the fun of Monopoly comes from gloating at your opponent when he lands on Mayfair complete with hotel. Or from trying to charge double the rent for a property that you don't even own. Or getting away with not paying rent because one of the other players is asleep. Or insisting on a player having to settle all his debts in full even though he has to mortgage every thing to the hilt.

In other words, the human element is missing. Some games need it, others don't. Backgammon, Bridge and Trivial Pursuit are largely social games. Scrabble and chess aren't and in that respect work considerably better on the computer.

So what of the pure strategy games that have been successful on the micro? Honourable mention must be made here of *Archon* currently available from Electronic Arts. This is the only purpose designed computer strategy game to have stood the test of time and very good it is too. For anyone who has not played the game, the basic premise is to capture certain key squares on the board before your opponent does. What makes the game special is that the board itself changes with time so that certain squares become easier to capture or hold on to as the squares change colour on an unending light ot dark back to light again cycle.

The other classic strategy game on the computer is, of course, chess and it is not difficult to see why. The game lends itself to analysis by computer. To reduce a chess program (and many other strategy games incidentally) to its simplest, the program awards marks for various positional and material gains.



For example, occupying a square towards the edge of the board might only rate a few points (this is of course leaving aside all other factors such as threats, leaving your own pieces exposed, the gaining of a tempo etc). A central square is usually considered to be more advantageous and would rate a bit more highly. The capture of the various pieces would in turn score points and so on right up to checkmate which would be awarded a score so high that nothing else could overtake it. The computer then looks at varying numbers of moves depending on how good the program is and picks the one with the highest score.

One advantage of a program like this is that to analyse more moves takes a longer period of time and so you have a simple built in skill factor. You instruct the program to make the best move that it has found after 10 seconds, 30 seconds, 1 minute, 5 minutes and so on. The result of this is that given any half way decent program (and most of the commercial ones are nowadays), the beginner and improving player should be able to set a stanard of opposition play that beats him about six times out of ten as mentioned above. For this player, it is simply a case of picking the program that you are happiest with – which graphics and bells and whistles suit you best.

As the player gets considerably better though, problems start to appear. The only way you can get a decent game is to wait for hours as the computer makes each move. Even then, there will come a stage when a player can regularly beat his or her opponent and the fun starts to go out of the game again. To this end, companies are constantly bringing out stronger and stronger programs.

Again, all this is very good if you happen to be one of the top players in the country, say very good club player or county player upwards. To the rest of us lesser mortals though, all this is irrelevant. We are never going to get much beyond level three anyway.

Using my crystal ball for the first time, there are also potential problems in this ever increasing improvement of the machines. What happens, just supposing, many years from now when the fifth generation of intelligent computers are well into their stride that a machine 'proves' that white, who plays first, should always win? Once these winning positions become known, one of the greatest games ever invented gets killed off stone dead overnight.

Now I am not saying that this will ever happen but it is a horrible thought. When chess computers first appeared, some of the world's top players made claims involving large sums of money that no machine would ever beat them.

To my knowledge, no-one has collected yet but the gap between the top players and the latest machines is getting smaller all the time.

Top players in other games also offer large money bets that they are better than any machine. One million dollars is on offer if you can beat the leading Japanese Go players and I have no doubt that one day, someone will collect, for Go is a game that lends itself to analysis of position much like chess. The problem here is that the game is nowhere near as popular as chess and therefore there are not as many players working on the problem.

The other game that can be considered here is bridge. Again, Zia Mahmoud from Pakistan, one of the world's top and certainly its most flamboyant player has made a one million dollar challenge. The problems facing any potential programmer here are both different and substantially harder than those facing the chess programmer.

In chess, the board is on view the whole time. The position is fully understood and it is just a case of analysing that position (not I hasten to add that is an easy thing to do before I get lots of letters from angry chess players). In bridge on the other hand, there is always an element of the unknown. Cards are held close to your chest. You also have a partner to help or hinder you. There is the opportunity for bluff and deception. Even if you and your and your partner hold exactly the same thirteen cards each, there are many millions of combinations for the remaining twenty six cards to be distributed to the opponents hands. To this end, any bridge program can only hope to play with the odds aiming to win in the long term.

Now all this seems to be getting a long way from strategy as applied to *Space Invaders* to let's try and work our way back. One advantage that programs offer over traditional board games is that they can offer aspects of play not previously available. The changing board in *Archon* is a good example of this. Wargames have been revolutionised by the availability of things like hidden movement. Not possible when moving lots of figures against a human opponent, it now becomes possible to add an extra degree of 'realism' to a game by not knowing where your opponents forces

lie until you discover them either through intelligence or when they attack you.

Role playing games are much in vogue at the moment. No-one would seriously consider them to be pure strategy games but there is an increasing strategic element present within these games and this is something that I think will start to spill over into other types of game.

Consider the excellent Dungeons and Dragons game *Curse of the Azure Bonds*. Now a lot of the game is taken up with battling various groups of monsters and these combat situations require a good deal of thought on the part of the player. It is not enought to waltz into a room swords and spells blazing. The monsters are of sufficient standing to fight back 'intelligently'.

To start with, you have to try and hit each enemy spell caster on each round of combat in order to stop him casting spells at you. Then you have to arrange protection for your own wizards. They in turn must decide which spell to use and where to target it. Do they cast a magic missile that will affect only one enemy character or a fireball that will damage a whole group. Is it worth burning one of your own party in order to damage fourteen of the opposition monsters or do you play safe and target your spell so that it only damages eight of them. Again, the fighters will have to decide whether to move against just one monster or attack several. The whole combat situation is fluid. There is no right or wrong answer. What is more important is that the idea of set patterns mentioned at the beginning of the article has disappeared. The game works well because it makes you think although you don't realise that you are doing it.

Dragging out the old crystal ball again, there are ideas here that could usefully be incorporated in arcadge games. Involve the players in a choice rather than merely moving left, right and firing. If it is done well, the player will not notice and the aversion to anything connected with strategy will disappear.

As a final example, let me consider an updated version of Space Invaders showing the sort of things that could easily be incorporated. Your ground defence forces pick up signals that an enemy force is on its way to invade the earth.

OK, what do you do. You send out scouts to try and find out as much intelligence about them as possible – who they are, what they want, what weapons they possess and more importantly, what their strengths and weaknesses are. You send out ambassadors to try and talk them out of invading you whilst at the same time buying time to organise your defences. When you launch your own craft, it is not just a case of one man trying to beat off the entire invasion fleet, you select different mission. Perhaps a small fleet of fast craft will try to draw off the enemy fighters leaving a hole for your heavier armed ships to get through to the bomber fleet.

You will be able to send reports back as new intelligence comes to light. At the same time though, the invading forces will have their own plans. It could be something simple like choosing randomly from a half a dozen basic attack scenarios – all out attack, interstellar siege etc. Or it could be something more advanced such as changing their tactics according to how you organise your defences. For swords and spells, substitute lasers and flying saucers.

To sum up then, I believe that the games of the future will include larger elements of strategy than they do now and that this can only be a good thing. Just because a game is a shoot-em-up, doesn't mean that it can't be an intelligent shoot-em-up.

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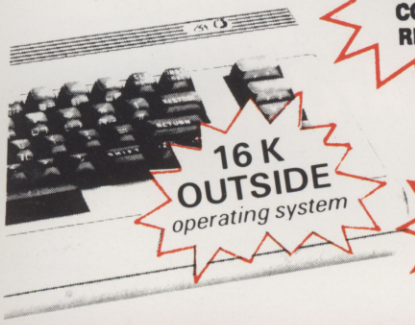

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PSET 2 - *SMITH-CORONA mode only.*
PSET 3 - *Turns the printing 90 degrees!!*
PSET 4 - *HARDCOPY setting for MPS802/1526.*

PSET B - *Bit-image mode.*
PSET C - *Setting Lower/Upper case and sending Control Codes.*
PSET T - *All characters are printed in an unmodified state.*
PSET U - *Runs a Serial printer and leaves the User-port available.*
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PSET L1 - *Adds a line-feed, CHR$ (10), after every line.*
PSET L0 - *Switches PSET L1 off.*

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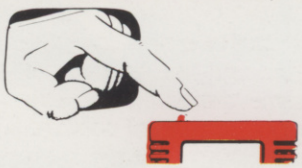

On the back of the POWER CARTRIDGE there is a Reset Button. Pressing this button makes a SPECIAL MENU appear on the screen.
This function will work with any programme.

CONTINUE - *Allows you to return to your program.*
BASIC - *Return to BASIC.*
RESET - *Normal RESET.*
TOTAL BACKUP DISK - *Saves the contents of the memory onto a Disk. The program can be reloaded later with BLOAD followed by CONTINUE.*
RESET ALL - *RESET of any program.*
TOTAL BACKUP TAPE - *As BACKUP DISK but to TAPE.*
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